

Legal Affairs

Nuclear Legislation in Central and Eastern Europe and the NIS

2003 Overview

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NUCLEAR ENERGY AGENCY
ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT

ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT

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- to achieve the highest sustainable economic growth and employment and a rising standard of living in Member countries, while maintaining financial stability, and thus to contribute to the development of the world economy;
- to contribute to sound economic expansion in Member as well as non-member countries in the process of economic development; and
- to contribute to the expansion of world trade on a multilateral, non-discriminatory basis in accordance with international obligations.

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NUCLEAR ENERGY AGENCY

The OECD Nuclear Energy Agency (NEA) was established on 1st February 1958 under the name of the OEEC European Nuclear Energy Agency. It received its present designation on 20th April 1972, when Japan became its first non-European full Member. NEA membership today consists of 28 OECD Member countries: Australia, Austria, Belgium, Canada, the Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Luxembourg, Mexico, the Netherlands, Norway, Portugal, the Republic of Korea, the Slovak Republic, Spain, Sweden, Switzerland, Turkey, the United Kingdom and the United States. The Commission of the European Communities also takes part in the work of the Agency.

The mission of the NEA is:

- to assist its Member countries in maintaining and further developing, through international co-operation, the scientific, technological and legal bases required for a safe, environmentally friendly and economical use of nuclear energy for peaceful purposes, as well as
- to provide authoritative assessments and to forge common understandings on key issues, as input to government decisions on nuclear energy policy and to broader OECD policy analyses in areas such as energy and sustainable development.

Specific areas of competence of the NEA include safety and regulation of nuclear activities, radioactive waste management, radiological protection, nuclear science, economic and technical analyses of the nuclear fuel cycle, nuclear law and liability, and public information. The NEA Data Bank provides nuclear data and computer program services for participating countries.

In these and related tasks, the NEA works in close collaboration with the International Atomic Energy Agency in Vienna, with which it has a Co-operation Agreement, as well as with other international organisations in the nuclear field.

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FOREWORD

Progress in Nuclear Law in Eastern Europe

This study presents the current state of legislation and regulations governing the peaceful uses of nuclear energy in the central and eastern European countries (CEEC) and the New Independent States (NIS). It also contains information on the national bodies responsible for the regulation and control of nuclear energy.

The nuclear energy sector has not escaped from the changes that have affected the political, economic and social climates over the past fifteen years. Under the former socialist regime, activities in this field came within the sole remit of the State administration. In the legal area, it had not been deemed necessary in most of these countries to enact laws guaranteeing democratic control of electronuclear programmes and establishing a clear distinction between activities promoting this source of energy and regulatory control, while ensuring that safety imperatives take priority over all other considerations.

With the arrival of new political forces came the will to remedy this situation promptly by creating new regulatory structures and drafting legislative texts based on those used in western countries. This evolution was all the more necessary given that, at the same time, the new policy of accountability had revealed safety defects in numerous nuclear installations in these countries, thus rendering international assistance indispensable.

From the legal point of view, the outcome of these years of effort is remarkably positive: almost all countries of Eastern Europe pursuing electronuclear programmes have established institutions capable of exercising efficient control over nuclear power plants and other installations. Accession to the international conventions which form the backbone of nuclear law has become widespread. Modern legislation is henceforth in place in almost all of these states.

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One of the principal objectives of the OECD Nuclear Energy Agency is to support the development and harmonisation of nuclear legislation in its member countries – primarily in the field of liability for nuclear damage. For many years, it has carried out a regular programme of study and information on nuclear law which is demonstrated, in particular, by its publication of the Nuclear Law Bulletin and studies devoted to various aspects of this discipline.

Faced with the proliferation of legislative and regulatory texts governing nuclear energy in Eastern Europe and in light of the interest generated by this phenomenon, the NEA published an Overview of Nuclear Legislation in Central and Eastern Europe and the NIS in 1997, describing both applicable legislation and regulations and the bodies responsible for their implementation. This study was first updated in 2000.

Over the past three years, numerous other texts have been promulgated, and new international conventions have entered into force in the CEEC and the NIS. It thus appeared timely to produce a fully revised edition of this Overview, while also enlarging its scope.

The NEA Secretariat would like to take this opportunity to thank its correspondents in the countries covered by this study for their assistance in bringing this new publication to a successful conclusion. The Secretariat would also like to thank Christelle Drillat, consultant with the OECD Nuclear Energy Agency, for her contribution to the study's preparation.



1. Albania; 2. Armenia; 3. Azerbaijan; 4. Belarus; 5. Bosnia and Herzegovina; 6. Bulgaria; 7. Croatia; 8. Czech Republic; 9. Estonia; 10. Georgia; 11. Hungary; 12. Kazakhstan; 13. Latvia; 14. Lithuania; 15. Former Yugoslav Republic of Macedonia; 16. Republic of Moldova; 17. Poland; 18. Romania; 19. Russian Federation; 20. Slovak Republic; 21. Slovenia; 22. Ukraine; 23. Uzbekistan.

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ALBANIA

Introduction

There are no nuclear power plants or reactors in Albania at present. The use of sealed and unsealed radioactive sources and of ionising radiation generally is therefore limited to medical, industrial and research purposes.

However, Albania plans to commission a TRIGA research reactor at the Institute of Nuclear Physics at Tirana.

The construction of a radioactive waste facility for the management of spent sealed sources and hazardous materials was completed in 2000.

Competent Nuclear Authorities

Pursuant to the Law on Ionising Radiation Protection of 9 November 1995, the Radiation Protection Commission (RPC), under the aegis of the Ministry of Health, is the national regulatory authority for radiation protection matters. The RPC is headed by the Minister for Health and at least 50% of its members are required to be radiation protection specialists. The Chairperson nominates the Commission members for a term of four years.

The RPC has extensive responsibilities including the following:

- issue of regulations, guides and codes of practice for radiation protection and nuclear safety, which are binding on all legal entities and physical persons;
- supervising the enforcement of this legislation;
- issue of licences for all activities involving radiation sources or radioactive materials;
- co-ordination and supervision of all national and local authorities in respect of immediate enforcement of measures necessary to mitigate the effects of nuclear accidents;
- formulation of recommendations and proposals for the improvement of the radiation protection legislation in force;
- approval of the Basic Safety Standards for radiation protection;
- co-operation with national and international organisations on radiation protection issues;

- defining the structure of the Office of Radiation Protection, including requirements concerning the nomination and dismissal of its Chairperson; and
- co-operation with the State Labour Inspectorate.

Under the authority of the RPC, the Office of Radiation Protection is responsible for implementing its decisions. The Office also inspects radiation installations and prepares reports for the RPC in relation to the issue, suspension and revocation of licences.

Although the roles of the Institute of Public Health and the Institute of Nuclear Physics are not specifically mentioned in the Law on Ionising Radiation Protection, in practice both are actively involved in its implementation. Their respective roles are to be defined in Government decrees.

The Institute of Nuclear Physics, Tirana, is part of the Academy of Sciences of the Republic of Albania. It is composed of four departments: Department of Radiometry and Radiation Protection, Department of Analytical Methods, Department of Technology, Department of Radiochemistry and Electronics, as well as an Administrative Department. For more than 30 years, the main activity of the Institute has been based on the development and application of nuclear techniques.

The Institute of Nuclear Physics is responsible for personal monitoring exposure, environmental radiological monitoring, calibrations of dosimetric equipment and radioactive waste management.

Legislation in Force

Law on Ionising Radiation Protection

Until November 1995, the legal regime applicable to nuclear activities in Albania was set out in a Governmental Decree first approved in 1971. In order to strengthen the legal framework governing radiation protection and to bring it into line with the relevant IAEA Basic Safety Standards, Law No. 8025 on Ionising Radiation Protection¹ was adopted by the Parliament on 9 November 1995. Amendments to this Law are under preparation. The Law is comprised of 3 Chapters divided into 12 Sections.

This legislation provides for protection against ionising radiation in respect of all activities involving radioactive materials and devices, thus providing for the protection of workers, the general public and the environment against the harmful effects of ionising radiation. It applies to any physical person or legal entity which (a) possesses, transfers, receives, uses, manufactures or installs a radiation source, (b) performs geological research, mining, milling, extraction, enrichment, sale, transfer, import-export, lending or storage of radioactive materials, (c) manages radioactive waste, foodstuffs or other products which are contaminated with radioactive materials. All persons performing activities involving radiation sources or radioactive materials must obtain a licence from the Radiation Protection Commission. All licence-holders must comply with the provisions of this Law and with its implementing decrees.

1. The text of this Law was reproduced, in English, in the "Texts" Chapter of *Nuclear Law Bulletin* No. 60 (December 1997) and is available on the NEA Web site at: www.nea.fr/html/law/nlb/NLB-60-EN.pdf.

Breach of the licensing requirements, or any other breach by the licensee of the Law or its implementing decrees is not subject by criminal prosecution, but is subject to administrative fines from 10 000 to 100 000 Albanian leks (ALL).

Other Relevant Legislation

Pursuant to the Law on Ionising Radiation Protection several regulations implementing this Law have been adopted:

- Decision of the Council of Ministers, adopted in 2002, on Import and Export of Radioactive Materials;
- Regulation on Safe Handling of Radioactive Materials, adopted in 1998, as modified in 2000. It sets out the duties of entities carrying out radiation activities vis-à-vis their professionally-exposed employees, in particular in relation to dose limitation, medical supervision, provision of protective devices and instruments, and specialised training;
- Regulation adopted in 1998, on Licensing and Inspection of Activities involving Ionising Radiation Sources, as modified in 2000. It provides detailed requirements pertaining to the issue of licences for activities involving radiation. The RPC is authorised to assess all licence applications for activities involving radiation and to issue such licences for a fixed time period. The RPC also nominates inspectors who are responsible for the control and enforcement of all licence provisions related to radiation protection;
- Regulation on Application for Licensing, adopted in 1998, as modified in 2000;
- Regulation on National Radiological Emergency Response Plan, adopted in 2000;
- Regulation on the Construction and Protection of Radiological Area, adopted in 2001; and
- Code of practice in radiology (2001).

Draft Legislation and Regulations

Pursuant to the Law on Ionising Radiation Protection, the RPC is to approve regulations on:

- the safe transport of radioactive materials;
- radioactive waste management;
- National Basic Safety Standards;
- radiation safety for the public and the environment;
- the activities of the Office of Radiation Protection.

A Code of practice in nuclear medicine and a Code of practice in radiotherapy will also be adopted.

International Conventions

Civil Liability for Nuclear Damage

Albania is not a Party to any of the international conventions on third party liability for nuclear damage.

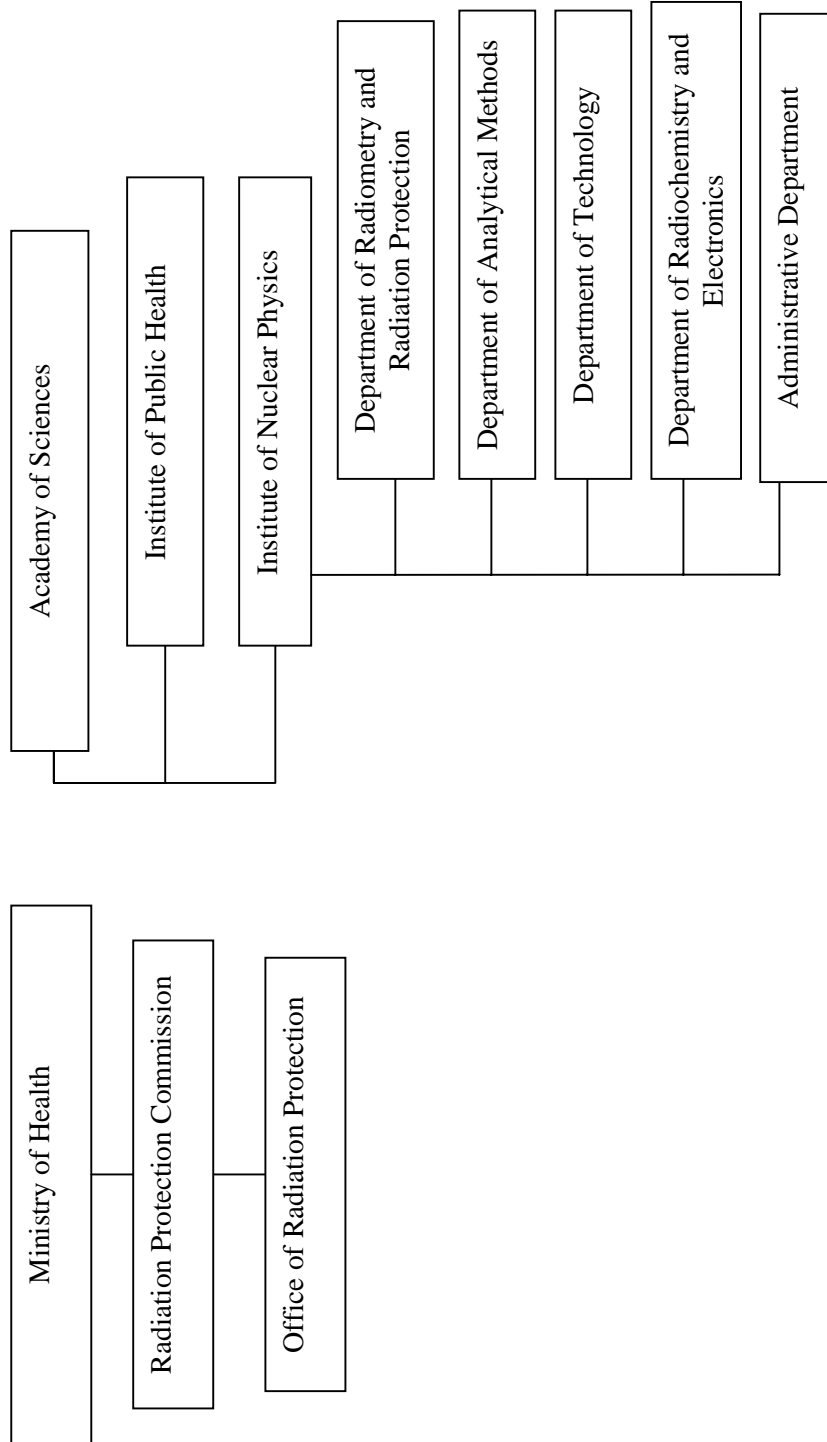
Other International Conventions

- Albania acceded to the 1968 Treaty on the Non-Proliferation of Nuclear Weapons on 12 September 1990, and it entered into force in this country on the same day.
- Albania acceded to the 1979 Convention on the Physical Protection of Nuclear Material on 5 March 2002 and it entered into force in this country on 4 April 2002.
- Albania acceded to the 1986 Convention on Assistance in the case of Nuclear Accident or Radiological Emergency on 30 April 2003 and it entered into force in this country on 31 May 2003.
- Albania ratified the 1996 Comprehensive Nuclear Test Ban Treaty on 23 April 2003.

Membership in Nuclear Organisations

Albania is a member of the International Atomic Energy Agency (IAEA).

ALBANIA
Radiation Protection System



ARMENIA

Information Note

The Law for the Safe Utilisation of Atomic Energy for Peaceful Purposes is currently under revision and the amendments and new provisions should be adopted at the end of 2003. The Armenian Nuclear Regulatory Authority is also under reorganisation. Therefore, the chapter below only reflects the legislative framework in force at the time of publication of the Overview.

Introduction

Armenia has one nuclear power station at Medzamor, which consists of two reactors, both VVER-440, model V270, and each with a capacity of 440 MWe. Only one reactor is currently in operation: Unit 2, having been returned to service on 26 October 1995 after a six-year shutdown following an earthquake in Armenia in December 1988. The Medzamor NPP generated 40% of Armenia's electricity in 2002.

The Armenian Government indicated in its 1995 energy programme its intention to operate the Medzamor plant (Unit 2) until 2005 and to build a new 500 MWe nuclear plant between 2005 and 2010.

Furthermore, Armenia operates a spent fuel dry storage unit at the Medzamor nuclear power plant.

Competent Nuclear Authorities

In November 1993, the Armenian Nuclear Regulatory Authority (ANRA) was established by the Government as a department to monitor nuclear and radiation safety. Its statute was confirmed by Decree No. 70 of 19 February 2000 and Governmental Decision No. 385 of 22 June 2000.

ANRA is comprised of experts who have worked in nuclear power stations and in the nuclear energy field in general. It is directly responsible to the Prime Minister and is independent of other governmental organisations and licensees. The Head of ANRA is appointed and dismissed by the Prime Minister.

ANRA is responsible for the regulation of nuclear and radiation safety at nuclear facilities and radioactive waste facilities and for nuclear and radiation emergency response systems. In this respect, ANRA carries out *inter alia* the following functions:

- it develops and submits draft safety regulations and rules to the Government;
- it issues and withdraws licences;

- it accredits persons involved in safety activities;
- it performs state accounting of nuclear materials and radioactive waste.

ANRA is empowered to enter into and inspect nuclear facilities and sites. It submits quarterly reports to the President, the National Assembly and the Government on the nuclear and radiation safety situation at installations. It is furthermore entrusted with the task of providing both the public and the authorities with information on nuclear and radiation safety.

The Armenian Nuclear Power Station, operator of the Medzamor plant, is under the authority of the Minister of Energy who is responsible for its safe operation.

In respect of emergency planning and management, the Armenian Government has established the Emergency Management Administration, which has responsibility for co-ordinating internal and international co-operation and assistance in the event of a nuclear accident or radiological emergency. The responsibility for the early notification of nuclear accidents in the territory of Armenia is assigned to ANRA.

In 1997, a Nuclear Energy Safety Council was established by Presidential Decree as an advisory body to the Prime Minister. The Council, consisting of 14 members, provides information on the regulatory policy for nuclear matters, especially with regard to Medzamor NPP.

Legislation in Force

Law for the Safe Utilisation of Atomic Energy for Peaceful Purposes

On 1 February 1999, the Law for the Safe Utilisation of Atomic Energy for Peaceful Purposes,¹ which constitutes the major legislative instrument in the field of nuclear energy, was adopted by the National Assembly. It came into force on 1 March 1999 upon its signature by the President.

The Law provides the legal framework and principles for management and regulation of the peaceful use of atomic energy. It determines the respective duties of the Government, national and regional State authorities and local authorities, together with the Operational Organisation which is held responsible for the safe operation of nuclear facilities and the safe treatment of nuclear and radioactive materials.

The basic principles for the regulation of the use of atomic energy are as follows:

- to ensure the protection of the population and the environment from the harmful effects of atomic energy;
- to ensure the predominance of safety requirements during the use of atomic energy;
- to facilitate availability of information concerning the use of atomic energy, with the exception of those matters governed by state secret;

1. The full text of this Law in English was reproduced in the Supplement to *Nuclear Law Bulletin* No. 65 (June 2000) and is available on the NEA Web site at: www.nea.fr/html/law/nlb/Nlb-65/armenia.pdf.

- to ensure the participation of concerned legal and physical persons in the drafting of nuclear legislation; and
- to ensure compensation for nuclear damage.

The Law provides that nuclear facilities, nuclear and special materials, equipment and technologies defined in the Law are state-owned.

The regulatory function of the State is to be exercised by the Armenian Nuclear Regulatory Authority, the duties of which are listed comprehensively in the Law. One of its principal tasks is to issue licences in respect of all activities involving atomic energy, and for all the phases from site selection to decommissioning of nuclear facilities as well as for use, storage, transportation, reprocessing, disposal, import and export of nuclear, radioactive and special materials, and nuclear equipment and technologies.

The Law establishes a system of state registration, accounting and control of ionising radiation sources and radioactive waste. The responsibility for such registration is assigned to the licensees who manage such sources, or whose activity resulted in the generation of radioactive waste. The import of radioactive waste is prohibited unless such waste was generated by another State as a result of services rendered to Armenia. Measures involving storage and disposal of radioactive waste are determined by the Government in co-operation with ANRA. Nuclear, radioactive and special materials, and nuclear equipment and technologies are also subject to state accounting and control.

Licensees are similarly responsible for physical protection, which is to be provided during all stages of operation of nuclear installations.

A special legal regime may be established in the area of nuclear facilities where the rights of those persons involved in the operation of the nuclear installation, as well as the general public, are restricted.

The Law contains provisions concerning third-party liability for nuclear damage, which provide that licensees for nuclear activities are liable for personal injury, property damage and environmental damage up to those amounts determined by specific legislation which will be adopted by Armenia. However compensation available for any nuclear incident must not be less than the minimum amounts determined by the international agreements ratified by Armenia, namely the 1963 Vienna Convention on Civil Liability for Nuclear Damage. In order to ensure the compensation of nuclear liability licensees are obliged to have sufficient financial resources. When liability for nuclear damage is assumed by the licensee, and the amount necessary to compensate the nuclear damage exceed the amounts determined by the specific legislation and the Vienna Convention, the State ensures the payment of the necessary additional amounts.

Law on Public Protection in Emergency Situations

The Law on Public Protection in Emergency Situations was adopted on 2 December 1998 and entered into force on 29 December 1998. This legislation establishes the principles governing measures or activities carried out in emergency situations with a view to ensuring protection of the public. It determines jurisdiction of the State and local authorities, and other organisations, and identifies the rights and responsibilities of citizens in this field. This Law also contains provisions on the actions of the emergency forces, the financing of public protection measures and liability for breaches of this legislation.

Other Relevant Legislation

There are provisions in other legal instruments which address issues of nuclear liability. Examples include:

- Article 6 of the Armenian Constitution which provides for the supremacy of international treaties ratified by the Armenian Republic over domestic laws; therefore, the 1963 Vienna Convention, approved by the Armenian Parliament on 24 August 1993, is a constituent part of the Armenian legal system;
- the Armenian Civil Code and the Code on Administrative Offences which contain provisions on nuclear liability: the Civil Code, in its Section 1072, indicates that the physical and legal persons, whose activities involve the use of source materials dangerous for the environment (e.g. the use of atomic energy), must compensate damage caused by such activities, unless they prove that the damage is the consequence of a deliberate action of a third party or natural disaster. In the field of atomic energy, liability for administrative violations is determined in accordance with Sections 97 and 97-1 to 97-6 of the Code on Administrative Offences, the Criminal Code and the Code of Criminal Procedure. Amendments to these Codes were adopted on 4 November 1996 and they entered into force on 30 November 1996.

Draft Legislation and Regulation

In the field of radioactive waste management, ANRA has initiated discussions on the development of a draft Law on Radioactive Waste and two legislative instruments on issues related to the treatment of radioactive waste. The draft Law contains provisions on radioactive waste collection, storage and disposal, as well as on state registration of such waste. A draft Governmental Decree on Radioactive Waste Management is also under preparation.

A draft Governmental Decree on Licensing Procedures is also under preparation.

International Agreements

Civil Liability for Nuclear Damage

Armenia acceded to the 1963 Vienna Convention on Civil Liability for Nuclear Damage on 24 August 1993 pursuant to Parliament Decision No. 317 of 22 June 1993, and it entered into force in this country on 24 November 1993.

Other International Conventions

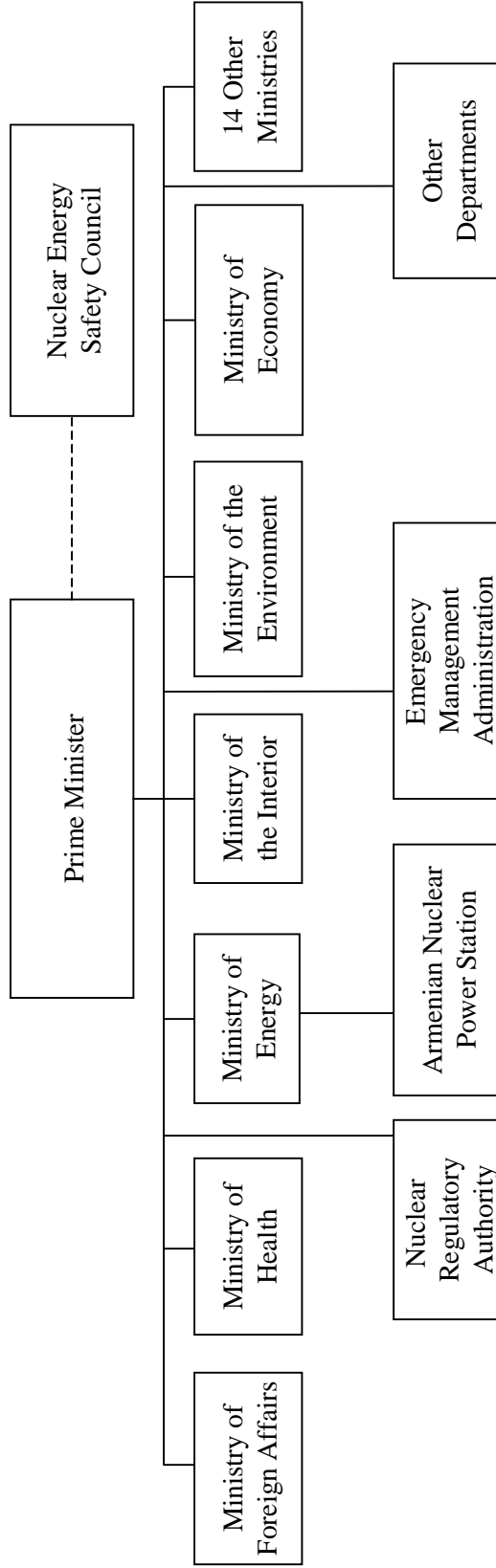
- Armenia ratified the 1963 Treaty Banning Nuclear Weapons Tests in the Atmosphere, in Outer Space and under Water on 7 June 1994 and it entered into force in this country on the same date.
- Armenia acceded to the 1968 Treaty on the Non-Proliferation of Nuclear Weapons on 15 July 1993 and it entered into force in this country on the same date.

- Armenia acceded to the 1979 Convention on the Physical Protection of Nuclear Materials on 24 August 1993 and it entered into force in this country on 23 September 1993.
- Armenia acceded to the 1986 Convention on the Early Notification of a Nuclear Accident on 24 August 1993 and it entered into force in this country on 24 September 1993.
- Armenia acceded to the 1986 Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency on 24 August 1993 and it entered into force in this country on 24 September 1993.
- Armenia ratified the 1994 Convention on Nuclear Safety on 21 September 1998 and it entered into force in this country on 20 December 1998.
- Armenia signed the 1996 Comprehensive Nuclear Test Ban Treaty on 1 October 1996.

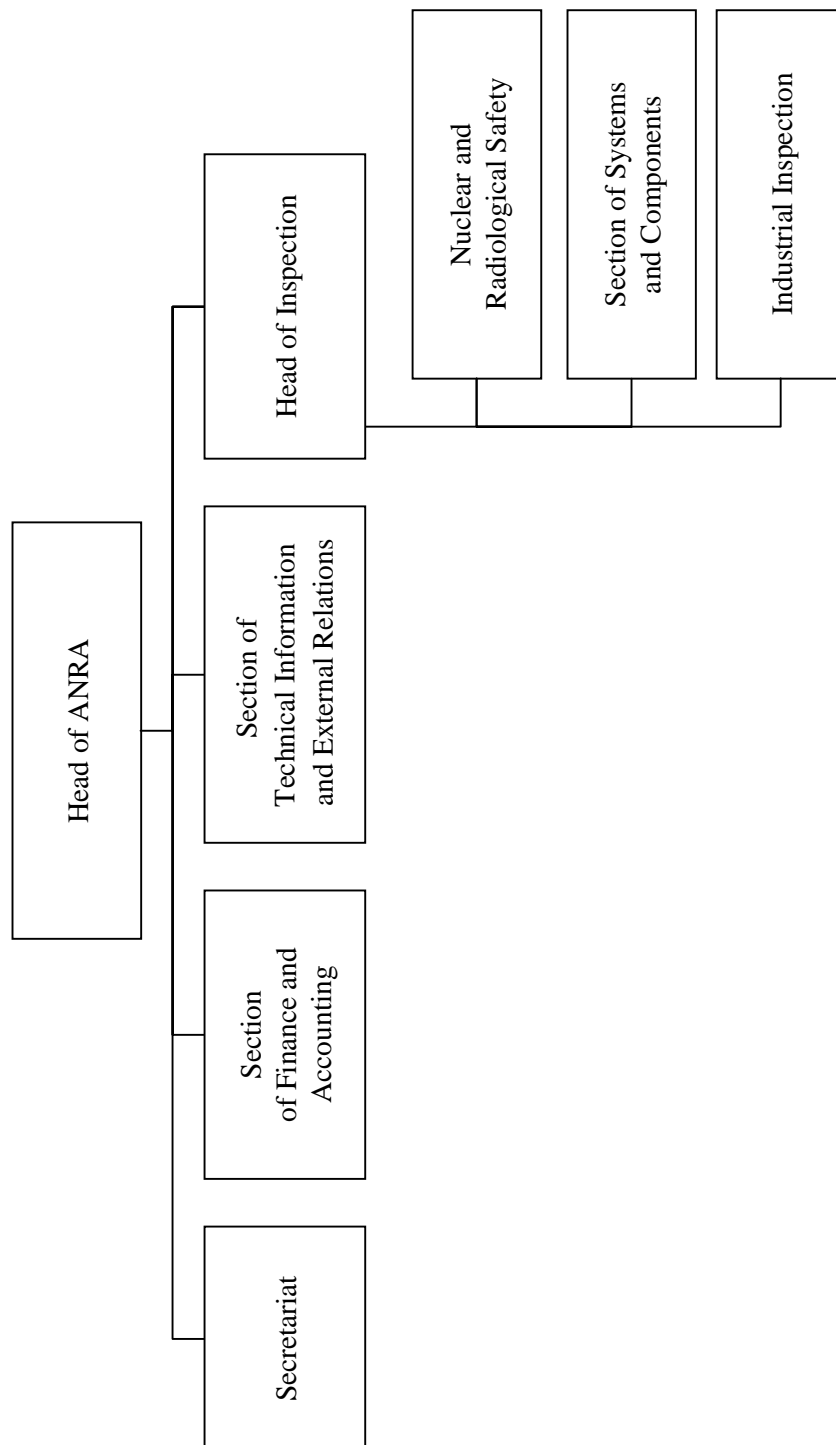
Membership in Nuclear Organisations

Armenia is a member of the International Atomic Energy Agency (IAEA) and the Armenian Nuclear Power Station is a member of the World Association of Nuclear Operators (WANO).

ARMENIA
Competent Authorities for Nuclear Energy



ARMENIA
Armenian Nuclear Regulatory Authority (ANRA)



AZERBAIJAN

Introduction

There are no nuclear power plants or research reactors in Azerbaijan. However, there is a low-level radioactive waste storage facility at Izotop Special Complex, near Baku.

Competent Nuclear Authorities

The Cabinet of Ministers of Azerbaijan is responsible for supervising the functions of the State administration in the field of radiation safety, as codified in Presidential Decree No. 758 of 19 August 1998.

Two bodies are primarily responsible for the supervision of activities concerning nuclear safety in Azerbaijan. The State Committee on Safety in Industry and Mining (*Gosgortekhnadzor*) is responsible for regulating the transport, storage and use of radioactive materials and sources of ionising radiation. It issues licences for the possession and use of radiation sources in industry, agriculture and trade.

The Ministry of Public Health supervises activities involving the medical uses of ionising radiation. The Azerbaijan Republic Centre for Hygiene and Epidemiology has been established within this Ministry to conduct sanitary inspections and regulatory control of ionising radiation sources and radiation installations. This Centre also operates a number of Sanitary Epidemiological Stations which monitor dose rates and hazardous substances in the environment. These stations are empowered to respond to a major radiological incident.

The Izotop Special Complex, established in 1962, was originally one of the 35 special centres in the former Soviet Union for the management of radioactive waste. This State body is also responsible for transportation of radiation sources to users in Azerbaijan facilities.

The Ministry of National Security has jurisdiction over the physical protection of radioactive sources and nuclear materials. It also implements measures to prevent illicit trafficking and other illegal activities involving such materials in Azerbaijan.

The State Border Service was established in 2001 as an independent agency operating checkpoints to control movement of controlled goods, including nuclear materials or radiation sources, into or from the national territory.

The State Customs Committee is responsible for preventing the illegal movement of controlled goods across Azerbaijan borders, including the illicit trafficking of radiological materials.

The Ministry of Ecology and Natural Resources establishes and supervises national environmental protection programmes. It operates the National Monitoring Service which takes readings of the quality of air, land and water.

The Ministry of Civil Defence measures and analyses radiological, chemical and other chemical releases on national territory. This Ministry also co-ordinates with other bodies on emergency response.

Several research institutes, under the auspices of the National Academy of Sciences, conduct research in areas of nuclear physics, radiation chemistry, radiotherapy. The Institute of Radiation Problems, established in 1969 under the former Soviet Union, operates a laboratory for the analysis of radiological materials.

Legislation in Force

Since independence, Azerbaijan has adopted a number of legislative instruments governing the safe uses of nuclear and radiological materials and activities.

Law on Radiation Safety of the Population

This Law was adopted on 30 December 1997 in order to establish the legal framework governing the safe use of radioactive sources and the protection of the population against the dangers of ionising radiation. It is divided into six chapters, the first of which establishes the basic principles of radiation protection and sets out definitions of key terms.

Chapter II describes the duties and responsibilities of State and local authorities to ensure radiation safety. Chapter III deals with the State management and control of activities involving ionising radiation sources. State authorities are empowered to carry out control of nuclear installations to verify compliance with radiation safety standards. The fourth chapter covers subjects such as the treatment of food by ionising radiation and the conditions governing the use of medical radiological equipment. Chapter V deals with emergency preparedness and actions to be taken in the event of a nuclear accident to protect the public and the workers. The last chapter establishes the right of the public to be informed of the radiological situation of the environment and within enterprises using radiation sources.

Following the adoption of the Law on Radiation Safety of the Population, Azerbaijan has passed a number of legislative instruments establishing the legal framework governing activities and liability with regard to radioactive sources, materials and waste.

Other Relevant Legislation

Criminal Code and Administrative Offences Code

Specific provisions address measures to enforce safety and security of radioactive materials, to prevent illicit trafficking and to impose penalties for violation of legislative or regulatory requirements.

Decree implementing the Law on Radiation Safety of the Population

Presidential Decree No. 758 of 19 August 1998 is the main instrument assigning responsibility for implementing various provisions of the 1997 Law to different offices, agencies and ministries in Azerbaijan. Primary licensing authority is attributed to *Gosgortekhnadzor* and the Ministry of Health.

Decree on Rules regulating External Trade in Azerbaijan

This Presidential Decree of 24 June 1997 establishes an export control system. Nuclear materials, nuclear technology and radioactive waste can be exported only under order of the Cabinet of Ministers.

International Conventions

Civil Liability for Nuclear Damage

Azerbaijan is not a Party to any of the international conventions governing civil liability for nuclear damage.

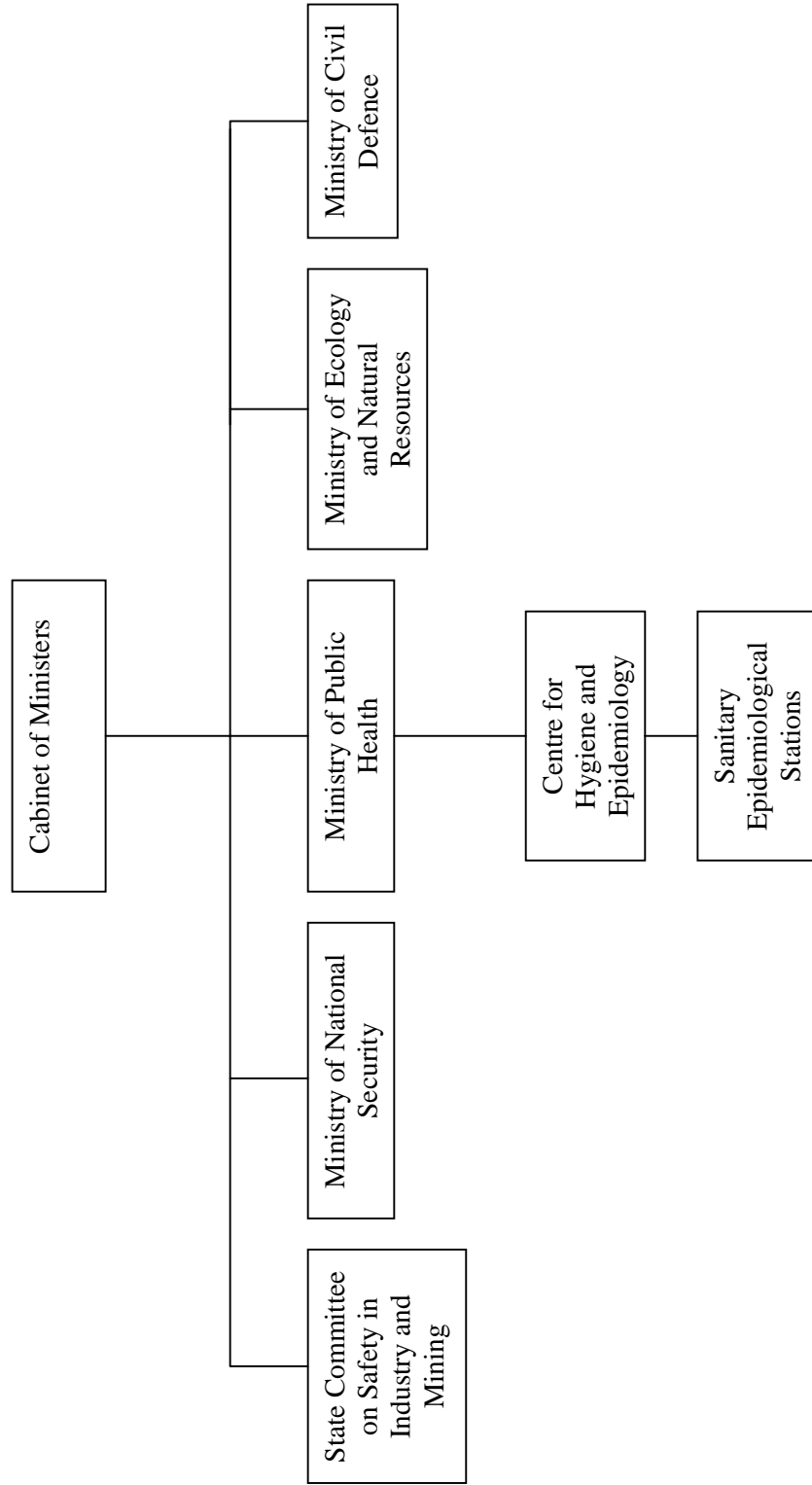
Other International Conventions

- Azerbaijan ratified the 1960 Convention on the Protection of Workers against Ionising Radiation on 19 May 1992.
- Azerbaijan acceded to the 1968 Treaty on the Non-Proliferation of Nuclear Weapons on 22 September 1992.
- Azerbaijan ratified the 1972 Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter on 1 July 1997.
- Azerbaijan ratified the 1996 Comprehensive Nuclear Test Ban Treaty on 2 February 1999.

Membership in Nuclear Organisations

Azerbaijan is a member of the International Atomic Energy Agency (IAEA).

AZERBAIJAN
Competent Nuclear Authorities



BELARUS

Introduction

There are no nuclear power plants in Belarus at present. However, there are various facilities involved in the use of nuclear energy in the industrial, research and medical sectors. In addition, there is a radioactive waste disposal facility, operated by the State-owned special enterprise Ekores, located near Minsk. Designed for radioactive waste generated by nuclear applications in the sectors mentioned above, it was commissioned in 1964.

A special commission, established in March 1998 pursuant to an Order of the Prime Minister, recommended not to construct any nuclear power plants in Belarus during the next ten years, but to continue work related to the development of nuclear energy in the future.

Competent Nuclear Authorities

General policy in the field of nuclear and radiological safety is decided by the Presidential Security Council and the Soviet of Ministers.

Under the authority of the Soviet of Ministers, several entities have jurisdiction in the nuclear field: the Ministry for Emergencies, the Ministry of Health, the Chernobyl Committee, the Ministry of Natural Resources and Environmental Protection, the Committee for Standardisation, Metrology and Certification and the Ministry of Foreign Affairs.

The Ministry for Emergencies is responsible for implementing state policies associated with the protection of the general public, prevention of and intervention in cases of radiological emergencies.

The Directorate for Supervision of Industrial and Nuclear Safety (*Promatomnadzor*), a division of the Ministry for Emergency, has specific responsibilities.

Promatomnadzor is responsible for developing the legislative, regulatory and technical framework for the use of atomic energy. It was formerly entitled the Committee for Supervision of Industrial and Nuclear Safety, and was transformed pursuant to Decree No. 516 of 24 September 2001 into a department with legal personality. Its legal status and tasks are set out in two instruments: Regulatory Resolution No. 572 of the Council of Ministers and Resolution No. 17 of 2001 adopted by the Ministry for Emergencies. Pursuant to these instruments, *Promatomnadzor* is the authority responsible for the regulation of radiation safety and radioactive waste management. It acts as a regulatory body, carrying out the assessment and verification of safety, the issue of permits and licences for all activities involving ionising radiation sources (with the exception of those below the established limit of activity), and the inspection of all activities involving such sources or other nuclear materials. It is also responsible for managing a registry of radiation sources and for supervising state control over the safe transportation of dangerous goods by air and river transport.

Promatomnadzor is also the authority responsible for the physical protection of nuclear materials and facilities. It co-ordinates activities of an organisational and technical nature related to the operation of the system of physical protection and maintains the State System for accounting for and control of nuclear materials. It exercises its functions in close co-operation with the Ministry of Internal Affairs, the Security Council, the Ministry of Transport and the State Customs Committee, with a view in particular to combating the illicit trafficking of nuclear materials.

The Chernobyl Committee was established in 1990 and presently functions under the Council of Ministers of the Republic of Belarus. It is responsible for minimising the consequences of the Chernobyl catastrophe, implementing scientific research and protecting the population and its habitat from the negative effects of radioactive contamination from the Chernobyl accident. The Committee is headed by a Chairperson appointed by the President of Belarus.

The Ministry of Health is responsible for ensuring radiation safety in medicine, industry and research. It also carries out tasks in relation to radiation protection of the public, including selective radiation control of foodstuffs in contaminated areas.

The Directorate for Hydrometeorology of the Ministry of Natural Resources and Environmental Protection is responsible for monitoring radiation in the environment. It is also in charge of the production of maps of areas contaminated by radionuclides.

The Committee for Standardisation, Metrology and Certification delivers certificates and accreditation for laboratories and radiation control posts, confirmation of measurement methods and testing and metrological attestations for measuring instruments.

The Ministry of Foreign Affairs is responsible for ensuring international co-operation in the field of nuclear energy and is empowered to issue licences for the export of specific goods and to co-ordinate the activities of all agencies and institutions involved in export control.

The Academy of Sciences performs research in the nuclear energy field and provides consulting services to the Government. The leading scientific establishment of the Academy in this field is the Sosny Joint Institute of Energy and Nuclear Research.

Finally, the National Commission on Radiation Protection is an expert advisory body which offers its opinion to senior governmental authorities on issues related to radiation safety.

Legislation in Force

Law on Social Protection of Citizens Affected by the Chernobyl NPP Accident and Law on Legal Treatment of Territories Contaminated as a Result of the Chernobyl NPP Catastrophe

The first legislative initiative of Belarus concentrated on the elimination of the consequences of the Chernobyl accident. Two special laws were adopted: in February 1991, the Law on Social Protection of Citizens Affected by the Chernobyl NPP Accident, and in November 1991, the Law on Legal Treatment of Territories Contaminated as a Result of the Chernobyl NPP Catastrophe. The first Law covers waste disposal procedures and the supervision of waste disposal sites and will apply until a comprehensive Law on radioactive waste management is adopted. It also provides for the protection of the rights and interests of the clean-up workers and both the population moved from the contaminated territories and those still living there. The Law also contains social protection measures

for citizens affected by accidents at other civil and military nuclear installations, nuclear tests and military service. The latter Law regulates the living conditions and economic and other related activities in the contaminated area. It aims to reduce the effects of radiation on the population and on ecosystems, to implement nature restoration and protection measures and to promote the rational use of natural, economic and scientific resources.

On 26 April 1999, the Law on Legal Treatment of Territories Contaminated as a Result of the Chernobyl NPP Catastrophe was amended. The amendments, which entered into force on 12 May 1999, modify the Law as follows:

- the periodicity of defining zones within contaminated areas has been changed: the zones are re-classified every five years;
- the practice in relation to carrying out of certain activities in zones with different levels of contamination is updated to take into account experience acquired;
- a more appropriate decision-making procedure for the use of arable land in the contaminated territories is established;
- more concrete requirements for the disposal of waste have been drawn up.

The revised Law prohibits acceptance of radioactive waste from abroad, with the exception of waste resulting from services rendered to Belarus by States under contractual obligations.

Law on Radiation Protection of the Public and its Implementing Decrees

The Law on Radiation Protection of the Public was adopted by the House of Representatives on 16 December 1997 and entered into force on 5 January 1998.

This Law sets out fundamental regulations for radiation protection of the public in respect of the use of ionising radiation sources, radioactive waste management and the mitigation of consequences of radiation accidents. It lays down conditions to safeguard human life and health and to protect the environment against the harmful effects of ionising radiation.

The Law is based on the principles of justification, optimisation and dose limitation. It establishes nuclear safety requirements and general principles for the protection of the population in the event of a nuclear accident. It also provides that any practice involving ionising radiation sources shall be subject to licensing, and that the licensee shall be responsible for ensuring radiation safety during the use of radiation sources as well as in the event of a nuclear accident.

This Law establishes the right of citizens to claim compensation for damage caused to their health and property as a result of exposure to ionising radiation or a radiation accident. It provides that full liability for personal injury and property damage of citizens lies with the user of ionising radiation sources, and that the user must compensate for that harm and damage in accordance with the procedure established under national legislation.

This Law refers to international agreements on the use of nuclear energy, to which Belarus is a Party, and stipulates that the provisions contained in such agreements shall take precedence over national legislation.

The Soviet of Ministers approved a Plan for the Implementation of the Law on Radiation Protection of the Public on 23 March 1998. This Plan provided for the development of several state programmes to upgrade the infrastructure in the field of radiation safety, and also for the preparation and review of the following Regulations:

- on state management in the field of radiation protection of the public;
- on licensing of activities involving the use of ionising radiation sources;
- on establishing the state system for accounting and control of radiation sources.

Provisional Sanitary Rules for the Management of Decontamination Waste of Chernobyl Accident Origin

These Rules came into force on 12 March 1998. These Rules define “decontamination waste” as substances formed as a result of work carried out to eliminate the consequences of the Chernobyl accident, with a view to restoring an acceptable radio-ecological environment around industrial and civil facilities in the contaminated areas. This waste has the following particular characteristics:

- most of it is formed in large quantities, and is not normally processed to reduce its concentration or volume;
- its radioactivity is caused mainly by ¹³⁷Cs, whose specific activity does not normally significantly exceed the minimum values established for radioactive waste;
- its storage, transportation and disposal are carried out in areas where the level of contamination of the soil is close to that of the waste itself.

These Rules include regulations on the collection, temporary storage, transportation, record keeping and radiation and technical control of decontamination waste at all stages of its handling. The waste must be disposed in repositories of types 1, 2 and 3, each of which are subject to different construction requirements. The Rules also covers measures to ensure the radiation protection of personnel.

Law on the Transport of Dangerous Goods

This Law was adopted on 6 June 2001 and entered into force on 3 July 2001. It is a framework law setting out general principles covering, *inter alia*, the transportation of nuclear and radioactive materials classified as dangerous goods under Category 7 of the established standards. It provides that *Promatomnadzor* shall ensure the state supervision of the safety of transportation of dangerous goods. The transportation of dangerous goods is subject to a licence and all persons directly involved in this activity should have followed special training.

The Law establishes, *inter alia*:

- the rights and obligations of legal entities and natural persons carrying out activities in the field of the transport of dangerous goods;

- procedures for state supervision, regulation and management in the field of the transport of dangerous goods;
- requirements concerning compulsory technical investigations into accidents or incidents occurring during the transportation of dangerous goods and record-keeping in respect of such accidents/incidents.

Technical investigations are carried out by a special commission headed by a representative of *Promatomnadzor*. If an accident causes death, damage to the environment or other severe consequences and financial support from the State is required, the investigation is conducted by a State Commission established by decision of the President of Belarus.

The Law provides that insurance coverage must be obtained against the risk of damage being caused to the life, health or property of third parties, or to the environment, as a result of accidents during the transportation of dangerous goods. Such insurance must be obtained in the manner established by the insurance legislation of Belarus.

Law on Protection of the Public and the Territory against Emergency Situations of a Natural or a Technical Character

This Law, adopted on 16 April 1998, provides that citizens of Belarus have the right to address both individual and collective requests or inquiries concerning protection of the public and the territory against radiation emergency situations to the government bodies and local executive and administrative authorities. It also provides that they have a right to compensation for damage caused to their health and property as a result of emergency situations; to receive free medical services, compensation and privileges for residing and working in areas affected by emergency situations; to obtain free state social insurance and compensation for damage incurred to their health in fulfilment of their duties during emergencies.

Law on Export Control

The Law on Export Control was approved on 19 December 1997 and came into force on 6 January 1998. This Law defines the legal bases for activities in the field of export control, and regulates relations arising in connection with the movement of objects subject to export control across the customs border of the Republic of Belarus and their subsequent use.

The Law provides that the objects subject to export control include goods, technology and services connected with the nuclear fuel cycle, nuclear materials which can be used for the production of nuclear weapons and nuclear explosive systems, and dual-use goods.

The Law addresses three principal issues, namely:

- ensuring national security and protecting national economic interests, while fulfilling Belarus' international obligations;
- setting up the State System of Export Control which regulates the licensing of imports and exports, inspections, dual-use goods and co-operation with international organisations and export control bodies of other States;

- harmonising the rules and procedures for export control with established international norms and practices.

Other Relevant Legislation

Resolution establishing a Uniform State System of Record-keeping and Control of Personal Exposure Doses

This Regulatory Resolution No. 929 of the Council of Ministers, adopted on 17 June 1999, implements the Law on Radiation Protection of the Public. It provides that controls are carried out on persons who are exposed either professionally or for medical purposes, or who live in territories where the effective dose resulting from natural exposure may be higher than 2 mSv or where the effective dose resulting from technically modified exposure may be higher than 1 mSv. The Ministry of Health is responsible for organising and maintaining the state dose register.

Resolution establishing a Uniform System of Accounting and Control of Radiation Sources

This Regulatory Resolution No. 1537 of the Council of Ministers of 4 October 1999 implements the Law on Radiation Protection of the Public. It provides that *Promatomnadzor* is responsible for establishing and maintaining this system. It also requires all users of radiation sources to submit technical information about the sources in their possession to *Promatomnadzor*. The Resolution defines the criteria governing the registration of radiation sources, the extent of information to be submitted and the responsibilities of *Promatomnadzor* with regard to the maintenance of this system.

Resolution on the Improvement of State Control over the Movement of Specific Goods Across the Customs Border

This Regulatory Resolution No. 27 of the Council of Ministers, adopted on 10 January 1998, implements the Law on Export Control. It brings into force two series of regulations: Regulations governing the Licensing of Export-Import of Specific Goods (Works, Services), and Regulations governing the Official Registration of Obligations for the Use Exported (Imported) Specific Goods (Works, Services) for Declared Purposes and Organisation of Control Over the Fulfilment of Such Obligations.

Resolution on the Establishment of Prohibitions and Restrictions on the Movement of Articles Across the Customs Border

This Regulatory Resolution of the Council of Ministers adopted in 1997 established a list of articles subject to customs restrictions, including ionising radiation sources and nuclear materials. Such restrictions include the requirement to obtain a permit from *Promatomnadzor* in order to transfer these articles to or from the national territory.

Order on the Physical Protection of Nuclear Materials during their Use, Storage and Transport

This Order, issued by *Promatomnadzor* in 1994, establishes the respective responsibilities of the state bodies concerned and of the operator in relation to the physical protection of nuclear materials and radiation sources during their use, storage and transportation. *Promatomnadzor* is the authority primarily responsible for the physical protection of nuclear materials (see *supra* under Competent Nuclear Authorities) and it exercises its functions in close co-operation with the Ministry of Internal Affairs, the Security Council, the Ministry of Transport and the State Customs Committee.

Civil Code of the Republic of Belarus

The Civil Code, adopted on 28 November 1998, establishes liability for damage caused by any activity which creates serious potential hazards for the neighbourhood. The production and use of nuclear energy is listed among such activities. Under Sections 934 and 948, a person carrying out activities which present a high potential hazard must compensate in full for personal injury or property damage incurred if he cannot prove that the damage was caused by *force majeure* or resulted from an intentional act of the aggrieved party.

Criminal and Administrative Codes of the Republic of Belarus

The Codes both contain provisions on the violation of various rules governing the safe uses of nuclear materials and radiation sources, providing for sentences of imprisonment and/or fines of an appropriate nature.

Regulations of the former Soviet Union

A number of regulations of the former Soviet Union are still in force in the territory of Belarus. Some of these regulations have been revised to take into account new Russian regulations and standards as well as certain IAEA standards. Examples are the Basic Sanitary Rules for the Management of Radioactive Wastes and the Regulations for the Safe Transport of Radioactive Substances.

Draft Legislation and Regulations

A draft Law on Uses of Nuclear Energy and Radiation Safety is currently under preparation.

International Conventions

Civil Liability for Nuclear Damage

- Belarus ratified the 1963 Vienna Convention on Civil Liability for Nuclear Damage on 9 February 1998, and it entered into force in this country on 9 May 1998.
- Belarus ratified the 1997 Protocol to Amend the Vienna Convention on 4 July 2003 and it entered into force in this country on 4 October 2003.

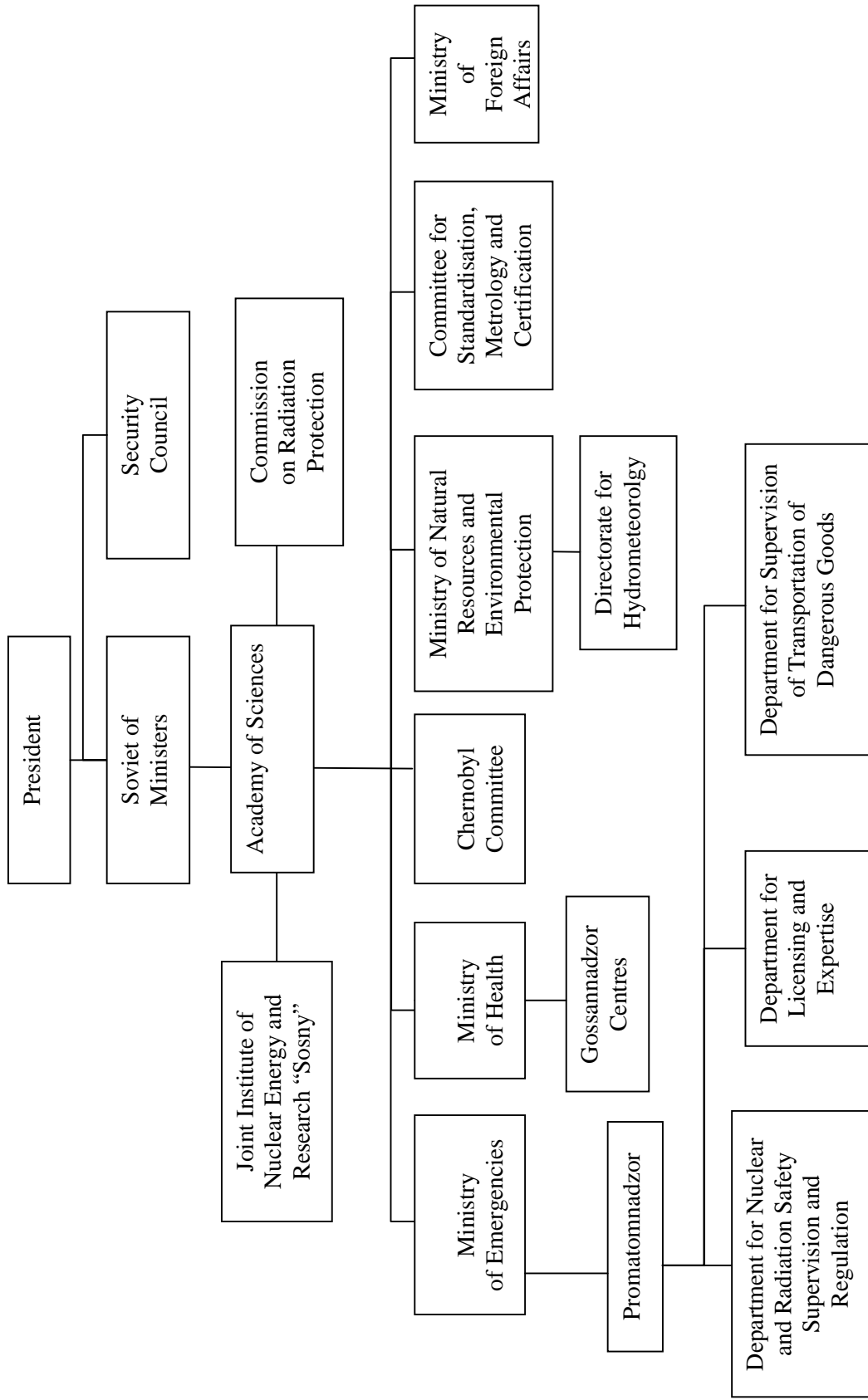
Other International Conventions

- Belarus ratified the 1960 Convention concerning the Protection of Workers against Ionising Radiation on 26 February 1968 and it entered into force in this country on 26 February 1969.
- Belarus ratified the 1963 Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and under Water on 16 December 1963 and it entered into force in this country on the same date.
- Belarus acceded to the 1968 Treaty on the Non-Proliferation of Nuclear Weapons on 22 July 1993 and it entered into force in this country on the same date.
- Belarus acceded to the 1971 Treaty on the Prohibition of the Emplacement of Nuclear Weapons and other Weapons of Mass Destruction on the Sea-Bed and the Ocean Floor and in the Subsoil thereof on 14 September 1971 and it entered into force in this country on 18 May 1972.
- Belarus ratified the 1972 Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter on 29 January 1976 and it entered into force in this country on 27 February 1976.
- Belarus succeeded to the 1979 Convention on the Physical Protection of Nuclear Material on 9 September 1993 with effect in this country from 14 June 1993.
- Belarus ratified the 1986 Convention on Early Notification of a Nuclear Accident on 26 January 1987 and it entered into force in this country on 26 February 1987.
- Belarus ratified the 1986 Convention on Assistance in Case of a Nuclear Accident or Radiological Emergency on 26 January 1987 and it entered into force in this country on 26 February 1987.
- Belarus acceded to the 1994 Convention on Nuclear Safety on 29 October 1998 and it entered into force in this country on 27 January 1999.
- Belarus ratified the 1996 Comprehensive Nuclear Test Ban Treaty on 13 September 2000.
- Belarus ratified the 1997 Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management on 26 November 2002 and it entered into force in this country on 24 February 2003.

Membership in Nuclear Organisations

Belarus is a member of the International Atomic Energy Agency (IAEA) and of the Nuclear Suppliers Group.

BELARUS
Competent Authorities for Nuclear Energy



BOSNIA AND HERZEGOVINA

Introduction

There are no nuclear power plants or reactors in Bosnia and Herzegovina at present. Consequently, the use of ionising radiation sources is essentially limited to medical, industrial and research uses.

Competent Nuclear Authorities

Pursuant to the Law on Radiation Protection and Radiation Safety of 24 January 1999, the Administration for Radiation Protection and Radiation Safety is the national regulatory body responsible for these fields. It is an integral part of the Ministry of Health. This Administration is responsible for the following activities:

- issuing regulations, technical documents, standards and instructions for radiation protection of professionally-exposed persons, the public and the environment from radiological hazards, and for physical protection, safeguards, transport, import, export and transit of radioactive materials;
- ensuring that appropriate records are kept and corrective actions are taken concerning, *inter alia*, matters such as radiation exposure of personnel, radioactive releases, incidents, etc.;
- issuing, amending and revoking licences, and making decisions in relation to radioactive waste;
- carrying out regulatory inspections;
- managing a registry on radiation sources and personnel who work with radiation sources, organising educational measures for such workers;
- carrying out statistical, scientific and other research in the field of radiation protection and safety;
- supervising and monitoring the radiation situation in Bosnia and Herzegovina.

The Administration is independent, co-operating with the Parliament and the Government through the Minister of Health. Professional services may be established within the Administration as internal departments, in order to perform all professional and technical activities important for supervision in the field of radiation protection and radiation safety (expertise, analyses, research, etc.) and which require the use of scientific and professional methods beyond the scope of the

Administration and medical institutions. If necessary, the Administration may nominate professional scientific staff.

Supervision is performed by the Federal Inspectors for Radiation Protection and Radiation Safety. These Inspectors have the following duties:

- to ensure authorisation of activities involving radiation sources and to order the removal of identified irregularities and insufficiencies within a fixed period;
- to prohibit operations in institutions which no longer meet the conditions established in respect of premises, staff and technical and other equipment;
- to order additional specialist training for all workers who have been identified as lacking in such expertise, and if necessary, to re-examine their qualifications.

Inspectors are obliged to inform all state institutions concerned of any breaches of rules or regulations which come to their attention during inspections.

The Group of Atomic Energy of the Federation of Bosnia and Herzegovina was established in November 1997 as an advisory body to the Government and to co-ordinate activities in the field of radiation protection and nuclear safety. The Group's main tasks are to formulate proposals and opinions for the Government in respect of radiation protection and nuclear safety issues, to monitor the implementation of the proposed measures and to present a report on these activities. The Group is also responsible for evaluating the nuclear safety and radiation protection situation in Bosnia and Herzegovina, presenting a report to the Government and proposing measures to improve the existing situation.

Legislation in Force

Law on Radiation Protection and Nuclear Safety

The Law on Radiation Protection and Nuclear Safety, which repealed legislation on the same subject adopted by the former Yugoslav Parliament, was adopted on 24 January 1999 by the Parliament of Bosnia and Herzegovina. This Law, which is based on the IAEA Basic Safety Standards, provides framework legislation and establishes a national regulatory body for radiation protection and radiation safety, namely the Administration for Radiation Protection and Radiation Safety (see *supra* under Competent Nuclear Authorities).

The Law comprises ten chapters, divided into 55 sections, governing general provisions, requirements for radiation practices, exposure, sources, radioactive waste, supervision and authorities, financing, penalties, authorisations to adopt implementing regulations, transitional and final provisions.

The Law is based on the principles of justification and optimisation, dose limitation, licensing, and the primary responsibility of the licensee. It establishes general and specific measures for protection against ionising radiation, and provides for systematic monitoring of radioactivity in foodstuffs and the environment. Measures for protection against radiation in specific cases, including methods of treatment and powers of state bodies are also covered.

The Law sets out the main principles for the protection of workers exposed to radiation: prior evaluation of risk and optimisation of protection, classification of workplaces and of workers, monitoring of exposure to radiation and medical supervision. The Law also regulates the protection of students, pregnant women and nursing mothers in accordance with the Basic Safety Standards.

It sets out specific health protection rules in relation to medical exposure to ionising radiation. The main provisions concern the qualifications of medical staff, conditions governing the use of radiological equipment, written protocols for each type of radiological practice, and the role of medical physics experts.

The Head of the Administration for Radiation Protection and Radiation Safety shall adopt more detailed regulations to define medical conditions which should be met by persons who work with radiation sources, as well as the criteria, procedures, structure and terms of medical examinations which they must have.

The Law establishes requirements which must be met by legal entities performing activities involving the use of ionising radiation: installations shall apply technical, safety, health and other standards for radiation protection and radiation safety, shall be in possession of technical and protective equipment, as well as programmes and plans to ensure the quality of radiation sources; finally, measures for removal of radioactive waste and spent radiation sources shall be taken.

Physical persons and legal entities may only perform activities involving ionising radiation if they have been granted a preliminary permit by the Administration for Radiation Protection and Radiation Safety. Legal entities performing activities involving ionising radiation must nominate a person responsible for radiation protection who will perform the following activities:

- internal supervision of radiation sources, of personnel working with these sources and protective measures against ionising radiation;
- monitoring of the personal dosimeters and the medical examinations of personnel working with radiation sources;
- setting up and maintaining of a registry on radiation sources and on personnel working with such sources, etc.;
- organisation of protective measures in the event of an accident;
- participation in inspections and informing the competent institution or inspector of any breaches of the rules.

The Law furthermore establishes the legal regime which applies to radioactive waste management. The producer of waste bears responsibility for the management of its own radioactive waste, and is required to make financial and material arrangements for the collection, transport, treatment, conditioning and disposal of waste arising from its activities.

The Law also establishes the obligations of the Government of Bosnia and Herzegovina in the event of a nuclear accident. In such a case, the Government is authorised to establish, upon preliminary proposal of the Administration for Radiation Protection and Radiation Safety, plans and programmes for the protection of the life and health of the public and of the environment.

The Government of Bosnia and Herzegovina is to make specific decisions on activities involving radioactive waste which is owned by the Federation but which is not situated on national territory.

Draft Legislation and Regulations

The Ministry of Health is in the process of drafting regulations to implement the Law on Radiation Protection and Radiation Safety.

International Conventions

Civil Liability for Nuclear Damage

Bosnia and Herzegovina succeeded to the 1963 Vienna Convention on Civil Liability for Nuclear Damage on 30 June 1998, with effect in this country from 1 March 1992.

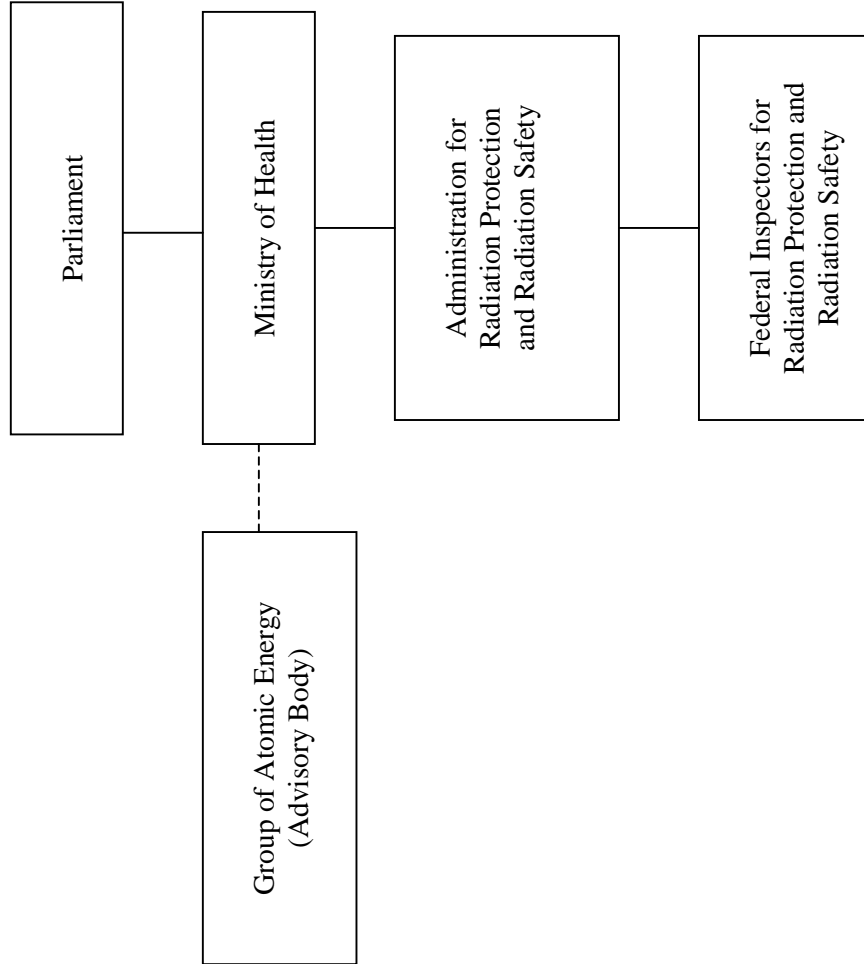
Other International Conventions

- Bosnia and Herzegovina acceded to the 1968 Treaty on the Non-Proliferation of Nuclear Weapons on 15 August 1994.
- Bosnia and Herzegovina succeeded to the 1971 Treaty on the Prohibition of the Emplacement of Nuclear Weapons and other Weapons of Mass Destruction on the Sea Bed and the Ocean Floor and in the Subsoil on 15 August 1994.
- Bosnia and Herzegovina succeeded to the 1979 Convention on the Physical Protection of Nuclear Materials on 30 June 1998, with effect in this country from 1 March 1992.
- Bosnia and Herzegovina succeeded to the 1986 Convention on the Early Notification of a Nuclear Accident on 30 June 1998, with effect in this country from 1 March 1991.
- Bosnia and Herzegovina succeeded to the 1986 Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency on 30 June 1998, with effect in this country from 1 March 1992.
- Bosnia and Herzegovina signed the 1996 Comprehensive Nuclear Test Ban Treaty on 24 September 1996.

Membership in Nuclear Organisations

Bosnia and Herzegovina is a member of the International Atomic Energy Agency (IAEA).

BOSNIA AND HERZEGOVINA
Competent Nuclear Authorities



BULGARIA

Introduction

In Bulgaria, there are at present four operational units at the Kozloduy nuclear power station with a total capacity of 3 538 MWe. Two reactors are VVER-440, model V230, and two are VVER-1000. The Kozloduy NPP generates 44.6% of the country's annual electricity production. Units 1 and 2 of the Kozloduy NPP were shut down on 31 December 2002. Bulgaria has agreed to shut units 3 and 4 in the process of its accession to the European Union.

The Belene project on the Danube river originally included the construction of four 1 000 MWe Units. Construction started in 1986 but stopped in 1990. Feasibility studies for completion of the first unit of the Belene plant, of which 65% has already been constructed, were initiated after the approval of the National Energy Strategy Plan of December 1995. A decision to complete the construction of this unit was taken in April 2002. Pursuant to the aforementioned Plan, a new 600 MWe nuclear power installation should be in operation in the period 2008-2010.

An interim spent nuclear fuel storage unit was commissioned in 1991 on the Kozloduy NPP site.

A research reactor (IPT-2000), built in the Sofia region and operated by the Institute for Nuclear Research and Nuclear Energy, was shut down in 1989. Pursuant to Decision No. 552 of the Council of Ministers of 6 July 2001, this research reactor shall be transformed by its partial decommissioning and reconstructed into a low-power (200 kW) reactor.

It is foreseen that the installations for the treatment and storage of low and intermediate level waste produced by the Kozloduy NPP shall be commissioned by the end of 2003. The existing repository for storage of radioactive waste from industry and medicine, located in the Sofia region, is currently undergoing reconstruction.

The National Electric Company is the owner and operator of all electrical energy-producing units in Bulgaria, and the network for its transmission and distribution.

Competent Nuclear Authorities

Until 2002, the State Committee on the Use of Atomic Energy for Peaceful Purposes (CUAEPP), established by the Atomic Energy Act of 1985, was the nuclear regulatory authority with jurisdiction over nuclear matters, including the implementation of national safety and radiation protection policy. A Decree adopted by the Council of Ministers on 29 August 2002 transformed the CUAEPP into the Nuclear Regulatory Agency (NRA). Pursuant to this Decree, the NRA assumed the rights, obligations, assets and liabilities of the CUAEPP.

The NRA is now therefore the national authority responsible for the regulation and control of nuclear energy and sources of ionising radiation as well as the safe management of radioactive waste and spent fuel. The NRA is an independent specialised state authority whose competence is established by the Act on the Safe Use of Nuclear Energy, adopted on 28 June 2002. The NRA Chairperson is designated for a period of five years by a decision of the Council of Ministers and appointed by the Prime Minister. The Chairperson has extensive authority to represent the NRA in relation to the issue, modification, extension, renewal, suspension and revocation of licences and authorisations to perform activities pursuant to the 2002 Act. The Chairperson is assisted by two deputy Chairpersons.

The NRA is a financially independent legal entity. On 29 August 2002, a Code of Regulation of the NRA was adopted by the Council of Ministers, providing the Chairperson with wider budgetary powers. The NRA therefore has a greater level of autonomy in financial matters. The Agency's activities are funded by the state budget and by revenue from taxes collected as well as by donations. The Act establishes priorities with regard to expenditure in the Agency's budget – funding of research, analyses and expertise is to take first place.

The NRA implements control over the fulfilment of safety requirements and standards related to the safe use of nuclear energy and ionising radiation and the management of radioactive waste and spent fuel. It grants, amends, supplements, renews, suspends and revokes licences and permits for safe implementation of activities under the 2002 Act on the Safe Use of Nuclear Energy. The NRA also provides individuals, legal entities and state bodies with objective information referring to nuclear safety and radiation protection and orders where necessary external experts' reports in this field. It co-ordinates the interface with other competent authorities of the executive power vested with regulatory and control functions related to the use of nuclear energy and ionising radiation and proposes to the Council of Ministers measures for co-ordination of activities.

Advisory Councils were set up to provide assistance and scientific advice, either upon the request of the Chairperson of the NRA, or upon their own initiative. Pursuant to the Acts of 1995 and of 2002, two advisory bodies were established under the NRA: the Advisory Council on Nuclear Safety and the Advisory Council on Radiation Protection. The Advisory Councils shall assist the Chairperson by providing expert advice on the scientific aspects of nuclear safety and radiation protection. The composition of these Councils is approved by the Chairperson of the NRA.

The Ministry of Health, the Ministry of Environment and Water, the Ministry of Internal Affairs, the Ministry of Agriculture and other state bodies exercise control over ionising radiation sources within their respective powers. In the event of a radiological emergency, the Minister of Health establishes additional health measures with a view to public protection. The Minister of Health also determines the obligatory health standards in all fields of radiation protection.

The National Centre on Radiobiology and Radiation Protection, established by Regulation of 18 June 1993 operates as a specialised body under the Ministry of Health, and has jurisdiction over radiobiological issues, radiation protection and medical emergencies. The Centre supervises the activities of the Health and Epidemiology Centre with regard to regular monitoring of radiation doses and medical controls of exposed workers. The Centre also deals with preventive measures, diagnostics, and scientific and technical activities in these fields.

The 2002 Law on the Protection of the Environment empowers the Ministry of the Environment and Water to control the state of the environment.

Regulation No. 8 of the CUAEPP and the Ministry of Internal Affairs on Nuclear Facilities and Nuclear Material Physical Protection determines the tasks of this Ministry in the field of the safe uses of atomic energy. It is principally responsible for physical protection and fire protection of nuclear power plants. Under Regulation No. 8, the Security Services of the Ministry of Internal Affairs are responsible for the following issues:

- illegal actions or inaction related to the safety and physical protection of nuclear facilities and materials;
- breaches of technological procedures and instructions; acts or omissions causing nuclear accidents or radiological emergencies; preliminary inspection of accidents for which deliberate action is suspected;
- distribution of information;
- control over the protection of state secrets and information related to physical protection.

The State Agency on Civil Protection acts as the operational headquarters of the Permanent Commission on Public Protection in the Event of Calamities and Emergencies. The State Agency on Civil Protection is responsible for the development of the National Emergency Plan on Radiological Emergencies in Nuclear Power Plants. The NRA Chairperson shall approve the on-site emergency plan prior to commissioning.

The Ministry of Energy and Energy Resources is responsible for development, implementation and control of state policy in the energy field. The State Commission on Energy Regulation regulates the interaction between producers, distributors and consumers of energy.

On the initiative of the CUAEPP, a VVER Regulators Association was established in December 1993 with a view to improving the safety of this type of reactor through co-operation on the development of regulatory policy and safety requirements.

The Institute for Nuclear Research and Nuclear Energy of the Bulgarian Academy of Science is the official Institute responsible for research into nuclear energy in Bulgaria. Decision No. 106 of the Council of Ministers of 23 January 1997 further provides that the Institute is the operator of the research reactor IPT-2000.

The Act on the Safe Use of Nuclear Energy (chapter 4) provides that a Radioactive Waste State-Owned Company shall be established in January 2004. The Company shall be composed of a Head Office and of specialised divisions. The Company shall be responsible for all activities related to the management, handling, treatment, conditioning, storage or disposal of radioactive waste, including the decommissioning of a radioactive waste management facility. It shall also control the construction, operation, rehabilitation and reconstruction of radioactive waste management facilities.

Pursuant to the 2002 Act on the Safe Use of Nuclear Energy, two funds - the Decommissioning of Nuclear Facilities Fund and the Radioactive Waste Fund are established within the Ministry of Energy and Energy Resources. The revenue of these Funds shall be generated through payments by persons operating a nuclear power plant or as a result of whose activity radioactive waste is generated, resources from the state budget, interest, donations and other contributions. The amount of the payments shall be determined by regulations of the Council of Ministers on the basis of a joint proposal by the Minister of Energy and Energy Resources and the Minister of Finance. The Funds are

to be managed by Steering Committees comprising nine members including the Minister of Energy and Energy Resources as President.

Legislation in Force

Act on the Safe Use of Nuclear Energy¹

The Act on the Safe Use of Nuclear Energy (Atomic Energy Act) was adopted on 28 June 2002 and it entered into force on 2 July 2002. This Act establishes the principles governing safety in the use of nuclear energy and ionising radiation, radioactive waste and spent fuel management and the rights and obligations of persons who perform activities pursuant to this Act. This Act repealed and replaced the 1985 Act on the Use of Atomic Energy for Peaceful Purposes² as amended.

The Atomic Energy Act contains eleven chapters. The first addresses the main principles governing the peaceful uses of nuclear energy including the primacy of nuclear safety, radiation protection and the As Low As Reasonably Achievable principles. The second chapter establishes the Nuclear Regulatory Agency (NRA). It defines the functions of the NRA on state control over nuclear safety and radiation protection and establishes the competence of the Chairperson of the NRA. The independence of the NRA is also strengthened with the attribution of budgetary autonomy to its Chairperson (see *supra* under Competent Nuclear Authorities).

The licensing regime is set out in Chapter 3 of the Act. It establishes the requirements and procedures for the construction and operation of nuclear power plants and for activities involving other sources of ionising radiation. The NRA Chairperson is empowered to issue, suspend and revoke licences for the use of nuclear energy and radiation sources and also to issue permits for the siting, design, construction, modification and commissioning of nuclear facilities. It provided for the establishment of a Nuclear Facilities Decommissioning Fund in January 2003 under the auspices of the Ministry of Energy and Energy Resources for the purposes of financing activities relating to decommissioning of nuclear facilities. This chapter also lays down criteria and requirements governing the training, qualification and certification of persons involved in the utilisation of nuclear energy. Pursuant to Articles 65 and 66, a Qualification Examination Commission shall be established by the NRA Chairperson in consultation with the Minister of Health.

This chapter also contains provisions on the accounting and control of nuclear material, radioactive substances and other sources of ionising radiation. These provisions govern the obligations of the persons who manufacture, process, store or use such materials, substances and sources. Article 73 states that nuclear material, radioactive substances and other sources of ionising radiation or radioactive waste whose owner is not known shall become the property of the State and the President shall nominate the person to whom they will be consigned. Nuclear material which is acquired in violation of the provisions of the Act shall be confiscated by an order of the President.

The management of radioactive waste and spent fuel is regulated in Chapter 4. A Radioactive Waste State-owned Company is to be established by January 2004 and it shall be responsible for managing any radioactive waste imported to the Republic of Bulgaria that can not be retransferred (see

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1. The full text in English of the Act on the Safe Use of Nuclear Energy was reproduced in the Supplement to *Nuclear Law Bulletin* No. 71 (June 2003).
 2. The full text in English of the Atomic Energy Act was reproduced in the Supplement to *Nuclear Law Bulletin* No. 58 (December 1996) and is available on the NEA Web site at: www.nea.fr/html/law/nlb/NLB-58-SUP.pdf.

supra under Competent Nuclear Authorities). A Radioactive Waste Fund shall be established to finance activities associated with radioactive waste management (see *supra* under Competent Nuclear Authorities). Chapter 5 empowers the NRA President to exercise regulatory control over nuclear safety, radiation protection and radioactive waste and spent fuel management. The Chairperson can authorise inspectors to exercise control under this Act. They are required to prepare a protocol of findings containing the results from the inspections, which shall then be submitted to the licence-holder who is entitled to provide explanations and objections within a one-week period. Based on the results, inspectors can issue mandatory instructions, report acts of administrative violations or propose to the Chairperson that coercive administrative measures be implemented.

Chapter 6 defines the areas with a special status – the radiation protection area which is established by order of the Minister of Regional Development and Public Works co-ordinated with the NRA Chairperson and the controlled area which is established by an order of the NRA Chairperson.

Chapter 7 contains provisions on physical protection which are based on the 1979 Convention on Physical Protection of Nuclear Material.³ The NRA Chairperson acts as central authority and contact point responsible for the physical protection of nuclear material pursuant to Article 5 (1) of the Convention. Chapter 8 on emergency planning and emergency preparedness establishes both off-site and on-site emergency plans. The conditions governing the development of emergency plans are established by a regulation of the Council of Ministers upon a proposal of the specialised state authority on civil protection and the NRA Chairperson.

Chapter 9 contains provisions on the application of safeguards. The NRA President is a co-ordinator for the implementation of the obligations of the Republic of Bulgaria ensuing from the 1968 Treaty on the Non-Proliferation of Nuclear Weapons and the Agreement between the People's Republic of Bulgaria and the International Atomic Energy Agency for application of safeguards in connection with the Treaty on the Non-proliferation of Nuclear Weapons and the Additional Protocol. The chapter also governs the obligations of the licensees performing activities subject to the Agreement and to the Additional Protocol.

Chapter 10 regulates civil liability for nuclear damage. It shall be determined according to the provisions of the Vienna Convention on Civil Liability for Nuclear Damage, to which the Republic of Bulgaria is a Party. The operator of a nuclear installation shall be solely liable for damage resulting from a nuclear accident. The liability of the operator is limited to 96 million Bulgarian Leva⁴ (BGL) and he is required to maintain insurance or financial security to cover his liability. In the event the funds of the operator are not sufficient to cover all damages the payment of the balance shall be guaranteed by the State. The prescription period for a claim for compensation is five years from the date on which the person suffering nuclear damage had knowledge or ought reasonably to have had knowledge of the damage. A priority system exists for the compensation of claims for loss of life or personal injury. Jurisdiction over actions for nuclear damage lies with the Sofia City Court of first instance.

Finally, the last chapter contains administrative penalty provisions. Fines are charged for physical persons and property sanctions are imposed upon legal entities. New and important sanctions include limitation or termination of the activity or temporary revocation of the certificate

3. The text of this Convention is reproduced in the *Nuclear Law Bulletin* No. 24 and is available at the NEA Web site at: www.nea.fr/html/law/nlb/NLB-24-EN.pdf.

4. On 1 December 2003, BGL 96 million corresponded approximately to EUR 49 million.

demonstrating legal capacity. They are imposed by an order of the President and may be appealed before the Supreme Administrative Court.

Other Relevant Legislation

Regulations implementing the Atomic Energy Act

Until new secondary legislation is adopted pursuant to the 2002 Atomic Energy Act, the implementing regulations adopted pursuant to the 1985 Atomic Energy Act remain in force to the extent that they do not conflict with the terms of the new legislation [Paragraph 19(2) of the Transitional and Final Provisions of the 2002 Act]. Therefore the following Regulations remain in force today.

Regulation No. 2 of 24 November 1987 of the CUAEPP lays down the procedural requirements for reporting on nuclear safety and radiation protection in respect of operational changes, events and accidents.

Regulation No. 3 of 24 November 1987 of the CUAEPP provides for safety during the design, construction and operation of nuclear installations. It sets out the main principles and safety criteria applicable to ionising radiation sources during the design, construction, operation and maintenance of nuclear installations, and for operating personnel and emergency preparedness plans. This Regulation is being amended in order to meet the more stringent international safety requirements for nuclear power plants, whether existing, being designed or under construction, and to include additional requirements concerning the decommissioning of nuclear power plants.

Regulation No. 4 of 9 March 1988 of the CUAEPP, last amended in 2001, concerns procedures for storage and transport of nuclear material and provisions for physical protection of nuclear material during its use, storage and transportation. It also defines the concepts used and the responsibilities of the relevant bodies. After the 2001 amendments, this Regulation takes into account the requirements for the accounting, storage and transport of nuclear material according to the obligations of the Republic of Bulgaria arising from the Treaty on the Non-proliferation of Nuclear Weapons and the safeguards agreement and additional protocol concluded with the IAEA.

Regulation No. 5 of 30 November 1988 of the CUAEPP, amended in 1993, on the Issue of Licences to Use Atomic Energy, determined the necessary documentation, conditions, procedures and terms for the issue of licences for the use of atomic energy. These licences were previously granted by the Inspectorate for the Safe Use of Atomic Energy (since the adoption of the 2002 Act, this responsibility now lies with the Nuclear Regulatory Agency). This Regulation also contains provisions on decommissioning licences for nuclear installations and other facilities using ionising radiation sources, including documents to be submitted for such licence applications.

Regulation No. 6 of 25 May 1989 of the CUAEPP, amended in 1991, lays down criteria and requirements for the training, qualification and certification of persons involved in the utilisation of nuclear energy and sets out guidelines for the recruitment of qualified personnel and to allow them to maintain and improve their qualifications. This Regulation is undergoing revision.

Regulation No. 7 of 7 January 1992 of the CUAEPP establishes the requirements for the collection, treatment, transport and disposal of radioactive waste in Bulgaria. Also included are provisions on radiation protection and control. However, the Regulation does not apply to spent

nuclear fuel or to the waste resulting from its treatment. It prohibits the import and transport on Bulgarian territory of radioactive waste produced abroad. It also prohibits discharge of all types of radioactive waste into industrial and municipal sewage systems, bodies of water and the soil.

Regulation No. 8 of the CUAEPP and the Ministry of Internal Affairs on the Physical Protection of Nuclear Installations and Materials was adopted on 6 August 1993. It lays down both institutional and technical requirements for the physical protection of nuclear materials during their use, transport and storage. It takes into account the IAEA Recommendations on the Physical Protection of Nuclear Materials and the Convention on the Physical Protection of Nuclear Material.

Regulation No. 10 of the CUAEPP, adopted in 2001, sets out the basic principles governing safety during the decommissioning of nuclear facilities. Safety conditions should be determined according to the characteristics of the decommissioning operation and in particular depending on whether ionising radiation sources, radioactive substances and radioactive waste are present on the site.

Regulation No. 11 of the CUAEPP on the Safe Storage of Spent Nuclear Fuel, adopted in 2001, determines safety requirements during design, construction, commissioning and operation of independent facilities for the storage, transport and handling of spent nuclear fuel from nuclear power plants with VVER-type reactors.

Decision on the Basic Standards for Radiation Protection

Decision No. 5 of the Council of Ministers on 10 January 2001 adopted the Basic Standards for Radiation Protection. These standards take into account Council Directive 96/29/Euratom of 13 May 1996 laying down basic safety standards for the protection of the health of workers and the general public against the dangers of ionising radiation and the 1996 IAEA Basic Safety Standards for Protection against Ionising Radiation and for the Safety of Radiation Sources.

The Council of Ministers of Bulgaria has also issued a Regulation excluding certain types of facilities which contain only small quantities of nuclear materials from the scope of the Vienna Convention. The type, conditions and terms of financial security to cover the operator's liability are, however, not defined and, as a result, in practice the State will ensure the payment of compensation claims for nuclear damage.

Regulation on Planning and Preparedness for Action in the case of a Radiation Accident

This Regulation, which was adopted on 26 March 1999 and entered into force on 9 April 1999, determines the respective duties of state bodies and local administration in this field, as well as the obligations of the operator of a nuclear power plant. It also identifies actions which should be taken in the case of an emergency, and defines updated criteria for the adoption of various protective measures for the population in the event of a radiation accident.

Regulation on Work with Radioactive Substances and Other Sources of Ionising Radiation

Regulation No. 0-35, which entered into force on 2 August 1974, is based on the Public Health Act and determines the basic requirements for radiation safety. It includes, *inter alia*, protective measures in relation to dose limitation for different categories of persons.

Regulation on Transport of Radioactive Substances

Regulation No. 46, which entered into force on 2 July 1976, regulates transport of radioactive substances by air, road and inland waterway. Its purpose is to prevent or reduce the irradiation and radioactive contamination of the public and the environment during transportation of such substances.

According to Article 5 of the Constitution of the Republic of Bulgaria, international agreements ratified and promulgated by the Republic of Bulgaria, and which have entered into force, are part of the internal legislation and prevail over domestic legislative or regulatory instruments in the case of conflict.

The 1985 Act on the Use of Atomic Energy for Peaceful Purposes added a new section to the Criminal Code of the Republic of Bulgaria: “Offences related to the Utilisation of Atomic Energy for Peaceful Purposes”.

Draft Legislation and Regulations

In order to harmonise Bulgarian legislation with European Union regulations, Bulgarian experts are currently analysing EU directives in the field of atomic energy use and are drafting a series of relevant Acts.

In the coming months, the Council of Ministers is to adopt regulations for the implementation of the 2002 Act on the Safe Use of Nuclear Energy.

Draft Amendments to Nuclear Safety Regulations

A Programme to upgrade Nuclear Safety Regulations is currently being implemented. Several regulations dealing with atomic energy and especially radiation protection are being drafted in the following fields:

- nuclear safety and radiation protection in nuclear power plants;
- transport of nuclear material;
- main safety rules for the treatment and storage of ionising radiation sources;
- radiation monitoring in normal and emergency situations;
- quality assurance during operation of NPPs;
- operational data reporting to the NRA;
- registration of ionising radiation sources;
- NPP systems and equipment periodical testing;
- NPP emergency planning;
- safety during decommissioning of nuclear facilities; etc.

International Conventions

Nuclear Third Party Liability

- Bulgaria acceded to the 1963 Vienna Convention on Civil Liability for Nuclear Damage on 24 August 1994, and it entered into force in this country on 24 November 1994.
- Bulgaria acceded to the 1988 Joint Protocol Relating to the Application of the Vienna Convention and the Paris Convention on 24 August 1994, and it entered into force in this country on 24 November 1994.

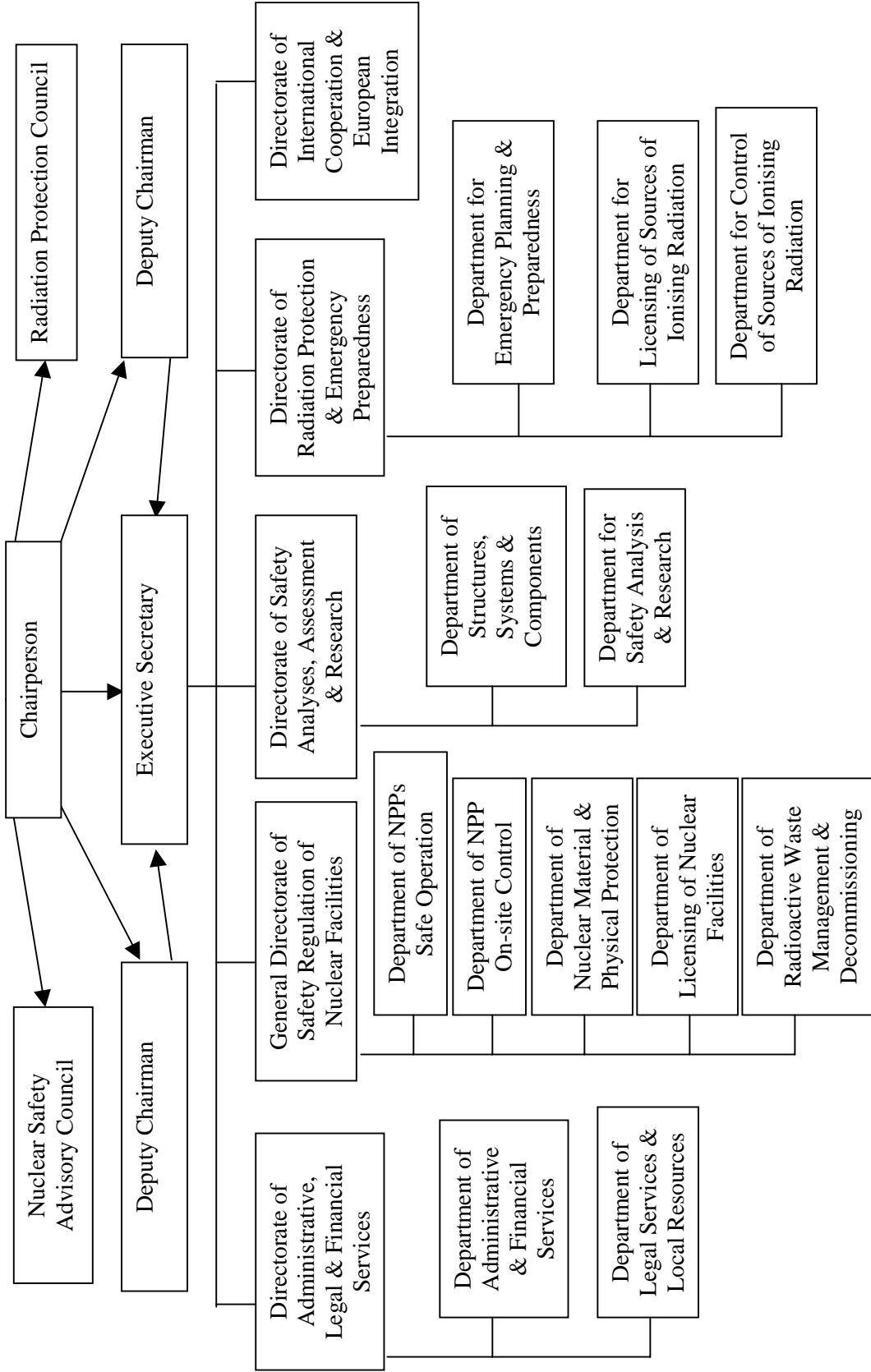
Other International Conventions

- Bulgaria ratified the 1963 Treaty Banning Nuclear Weapons Tests in the Atmosphere, in Outer Space and under Water on 13 November 1963 and it entered into force in this country on the same date.
- Bulgaria ratified the 1968 Treaty on the Non-Proliferation of Nuclear Weapons on 5 September 1969 and it entered into force in this country on 5 March 1970.
- Bulgaria ratified the 1971 Treaty on the Prohibition of the Emplacement of Nuclear Weapons and other Weapons of Mass Destruction on the Sea-Bed and the Ocean Floor and in the Subsoil Thereof on 16 April 1971 and it entered into force in this country on 18 May 1972.
- Bulgaria ratified the 1979 Convention on the Physical Protection of Nuclear Material on 10 April 1984 and it entered into force in this country on 8 February 1987.
- Bulgaria ratified the 1986 Convention on Early Notification of a Nuclear Accident on 24 February 1988 and it entered into force in this country on 26 March 1988.
- Bulgaria ratified the 1986 Convention on Assistance in Case of a Nuclear Accident or Radiological Emergency on 24 February 1988 and it entered into force in this country on 26 March 1988.
- Bulgaria ratified the 1994 Convention on Nuclear Safety on 8 November 1995 and it entered into force in this country on 24 October 1996.
- Bulgaria ratified the 1996 Comprehensive Nuclear Test Ban Treaty on 29 September 1999.
- Bulgaria ratified the 1997 Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management on 21 June 2000 and it entered into force in this country on 18 June 2001.

Membership in Nuclear Organisations

Bulgaria is a member of the International Atomic Energy Agency (IAEA), and the Bulgarian National Electric Company is a member of the World Association of Nuclear Operators (WANO). Bulgaria is also a member of the Nuclear Suppliers Group and the Zangger Committee.

BULGARIA
Nuclear Regulatory Agency



CROATIA

Introduction

Croatia has no nuclear installations or nuclear fuel cycle facilities on its territory at present. However, the national electricity company (HEP) of Croatia is a co-owner of the nuclear power plant (a pressurised water reactor – 664 model of 676 MWe) situated at Krško in Slovenia. On 19 December 2001, the Governments of Croatia and Slovenia signed a formal Agreement to resolve a long-standing dispute as to the ownership of the Krško nuclear power plant, located in southeast Slovenia, in operation since 1981. This Agreement entered into force on 11 March 2003. It provides, *inter alia*, that ownership of the plant is to be shared by the two countries on a 50/50 basis, with 50% of output to be delivered to Croatia and allowing Croatian citizens to be employed by the Slovenian operating company.

With respect to radioactive waste management, there exist two storage facilities for used radiation sources and low level waste produced in various applications of radiation sources.

Competent Nuclear Authorities

The Ministry of Economy is the authority with jurisdiction over nuclear safety, and it has a special department responsible for nuclear safety. This Ministry is responsible for the dissemination to the public of information on environmental monitoring data related to radioactive releases from Krško NPP in Slovenia and for all activities related to nuclear materials.

Radiation protection falls within the jurisdiction of the Ministry of Health. This Ministry and its Health Inspectorate are responsible for the licensing and inspection of activities involving ionising radiation, the issue of transport permits for radioactive materials and equipment generating ionising radiation, personnel dosimetry and occupational radiation protection. The Inspectorate also maintains, through authorised institutions, personnel dose records, and is responsible for planning, preparedness and response management for radiological emergencies. Concerning radioactive waste, the Minister of Health is entrusted with the regulation of the treatment and disposal of radioactive waste produced by the activities of licensees.

A Croatian Institute for Radiation Protection was established by the 1999 Act on Radiation Protection as the competent body to perform expert activities with regard to radiation protection. The Institute reports annually to the Minister of Health on the implementation of radiation protection measures, and is vested with the power to formulate standards and methods of monitoring ionising radiation protection, to support the scientific, statistical and other research activities in the field of radiation protection, to define the framework for educational programmes and to provide expert opinion in relation to the licensing of radiation sources. Supervision and enforcement of the radiation safety measures is the responsibility of the Sanitary Inspection Department of the Ministry of Health.

A Commission for Radiation Protection was also established in 2002 by the above-mentioned 1999 Act. Comprising nine members nominated by the Government, it is responsible for providing the Government with proposals and opinions concerning radiation protection, both under normal circumstances and in the event of an emergency situation.

Pursuant to the Act on Protection against Ionising Radiation and Nuclear Plants and Facilities Safety Measures of 1981, the Ministry of Internal Affairs is responsible for the adoption and control of protective and security measures in connection with the risk of handling of nuclear material and illicit trafficking. In addition, this Ministry makes decisions on special protective measures with regard to the carriage of radioactive material subject to the Act on the Transport of Dangerous Substances of 1993.

The Hazardous Waste Management Agency (*Agencija za Posebni Otpad – APO*) was originally set up in 1991. It is a national agency established to organise and perform activities related to the management of the disposal and storage of hazardous waste, including radioactive waste. APO also assists governmental bodies in the implementation of environmental protection policy. One of its basic goals is to define the technical prerequisites for the construction of low and intermediate level radioactive waste disposal facilities. It furthermore disseminates information to the public on the safe handling of hazardous and radioactive waste.

The *Rudjer Boskovic* Institute in Zagreb and the Institute for Medical Research and Occupational Health are authorised by the Minister of Health to implement radiation protection measures, such as personnel dosimetry and environmental monitoring. The *Rudjer Boskovic* Institute has a computer centre for monitoring radioactivity in the environment and the Institute for Medical Research and Occupational Health possesses a mobile radiological laboratory. Finally, the University Clinical Centre *Rebro* in Zagreb has created hospital facilities for medical treatment of irradiated and contaminated persons.

Legislation in Force

Act on Protection against Ionising Radiation

Croatia has legislation on nuclear safety which it inherited from the former Yugoslavia, namely the Act on Ionising Radiation Protection and Nuclear Plants and Facilities Safety Measures of 1981 and the Act on Radiation Protection and the Safe Use of Nuclear Energy of 21 November 1984.¹ Only the nuclear safety provisions of these Acts are still applicable.

As the Croatian authorities considered that the 1984 Act was out of date, its provisions governing ionising radiation were replaced by an Act on Protection against Ionising Radiation, which was adopted on 5 March 1999² and entered into force on 28 March 1999.

It establishes the principles governing radiation protection, the course of conduct to be taken in emergency situations, the treatment of radioactive waste and supervision of the implementation of

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1. The full text in English of this Act was reproduced in the Supplement to *Nuclear Law Bulletin* No. 36 (December 1985) and is available on the NEA Web site at: www.nea.fr/html/law/nlb/NLB-36-SUP.pdf.
 2. The full text in English of this Act was reproduced in the Supplement to *Nuclear Law Bulletin* No. 65 (June 2000) and is available on the NEA Web site at: www.nea.fr/html/law/nlb/Nlb-65/croatia.pdf.

radiation protection measures, with a view to reducing the risk to the life and health of the public as well as to the environment.

The Act sets out the three basic principles applicable in this field: justification, optimisation and limitation of exposure to radiation. Moreover, it provides that the safety measures to be taken in order to ensure radiation protection must include, *inter alia*:

- systematic examination and detection of the presence, type and extent of ionising radiation and radioactive sources in the environment;
- establishment of external and internal limits of the exposure of the public to ionising radiation; provision of equipment and devices for radiation protection;
- establishment of conditions governing siting, construction and operation of facilities where ionising radiation sources are used, activities involving such ionising radiation, and implementation of emergency response;
- measures aiming at storage, treatment, management and final disposal of radioactive waste;
- education and advanced training of personnel in the field of radiation protection, and examination and permanent control of the health of radiation workers;
- record-keeping in relation to accounting for ionising radiation sources and exposure of radiation workers, patients and other members of the public.

The Act establishes an effective dose limit for occupational exposure, which is set at 100 mSv during a five year period, or approximately 20 mSv per year, on condition that radiation exposure does not exceed 50 mSv during any one given year. The dose limit for persons not engaged in activities involving ionising radiation sources is set at 1 mSv annually. The limitation of exposure to ionising radiation does not apply to radiation exposure of patients for medical purposes.

Persons working with ionising radiation sources are required to have special education in the field. The Act also lays down requirements with regard to the health conditions of radiation workers.

Activities involving radiation sources are subject to the delivery of a licence from the Minister of Health. The Act sets out the applicable requirements to obtain such a licence. The licensee must designate a person responsible for ionising radiation protection, and the qualifications required for this person are established in this legislation.

The Act also governs emergency situations, and the establishment of a national plan and programme of measures for ionising radiation protection in the event of a radiological emergency.

The Minister of Health is entrusted with the regulation of the treatment and disposal of radioactive waste produced by the activities of licensees. The Act explicitly prohibits any import, treatment, storage or final disposal of radioactive waste originating from outside Croatia.

The Act establishes the Croatian Institute for Radiation Protection as the competent body to perform expert activities with regard to radiation protection, as well as a Commission for Radiation Protection (see *supra* under Competent Nuclear Authorities).

The Minister of Health is responsible for the administrative surveillance of the implementation of the provisions of this Act and of its implementing legislation.

Basic principles and requirements for the system of accounting and control of all nuclear materials are found in the Regulation on Material Balance Areas and the Mode of Keeping Records Accounting for Nuclear Raw Materials and Nuclear Materials as well as the Submission of Data Contained in Such Records.

Act on Liability for Nuclear Damage

On 9 October 1998, the Croatian Parliament adopted an Act on Liability for Nuclear Damage,³ which amended the previous Act of 1978 on this matter. The 1998 Act governs liability for nuclear damage which results from peaceful uses of nuclear energy, as well as insurance and other financial security covering such liability. The definitions of nuclear material and nuclear installation to which the provisions of the 1998 Act refer, as well as the definition of nuclear damage, are the same as those contained in the 1963 Vienna Convention, to which Croatia is a Party.

Liability for nuclear damage lies exclusively with the operator of a nuclear installation, irrespective of fault. Exceptionally, a carrier of nuclear material may take the place of the operator. The operator is liable for nuclear damage caused by a nuclear incident if the incident occurred in his nuclear installation or during the transport of nuclear material to or from his installation.

The 1998 Act modified to a certain extent the provisions of the 1963 Vienna Convention in respect of liability for damage occurring during the transport of nuclear material. In addition, nuclear material may be imported into or transported through the territory of Croatia only if the carrier has a certificate issued by or on behalf of the insurer or other financial guarantor providing the security required, which covers liability for nuclear damage up to an amount not less than 320 million Croatian kunas (HRK).⁴

The operator is obliged to provide and maintain insurance or other financial security covering his liability for nuclear damage of an amount not less than HRK 320 million. If the liability of the operator for nuclear damage which may occur during transport of nuclear material is not covered by such insurance or other financial security, such liability shall be covered by a separate insurance policy or financial security.

The 1998 Act introduced elements of state intervention in respect of compensation for nuclear damage, in certain strictly enumerated situations. More precisely, the Act has recognised the obligation of Croatia to establish measures of supervision to verify the existence and content of insurance or financial security contracts. The State shall provide compensation for nuclear damage up to HRK 320 million where the operator fails to provide and maintain insurance, where the damage is not compensated under the terms of the insurance policy or if the insurer is insolvent. The State has a right of recourse in this respect against the insurer.

The 1998 Act states that all other matters which are not specifically regulated by its provisions shall be governed by the provisions of the 1963 Vienna Convention.

3. The full text in English of this Act was reproduced in the Supplement to *Nuclear Law Bulletin* No. 63 (June 1999) and is available on the NEA Web site at: www.nea.fr/html/law/nlb/NLB-63/croatia.pdf.

4. On 1 December 2003, this amount corresponded to approximately EUR 43.5 million.

As regards insurance of nuclear liability, the Croatian insurers have established a Nuclear Insurance Pool, the “Croatian Nuclear Pool”, consisting of specialised insurance and reinsurance companies. It is based on fundamental principles common to all nuclear pools. It was originally established in 1977 as one common federal Pool, but was split into a Croatian and a Slovenian Pool in 1994. Both Pools share the coverage for third party liability at the Krško NPP, and act as co-insurers in respect of property damage insurance.

Other Relevant Legislation

The Act on Ionising Radiation Protection and on the Safe Use of Nuclear Energy of 21 November 1984 contains provisions relating to nuclear safety which are still applicable. On the basis of this Act several regulations were adopted:

- Regulation on sitting, construction, commissioning, start up and operation of nuclear facilities (1988). This Regulation establishes that during the operation of a nuclear facility the licensee has to review and assess the safety of the facility taking into account the operational experience of other nuclear industries and technology development. The Regulation also requires that a system of quality assurance be established based on the classification of products and services according to their importance for safety.
- Regulation on preparation and content of safety analysis report and other documentation relevant to the assessment of the safety of nuclear facilities (1988).
- Regulation on education, experience and examination of personnel conducting specific work at the nuclear installation (1988).

Several regulations were adopted following the entry into force of the 1999 Act on Protection against Ionising Radiation:

- Regulation on exposure limits, on the conditions of exposure for special purposes and on intervention levels (1999). This Regulation establishes a system of dose limitation based on the ICRP Publication No. 60 and on the International Basic Safety Standards for Protection against Ionising Radiation and for the Safety of Radiation Sources 1996 Edition. The exposure of workers and the population shall be restricted by a system of dose limitation which shall include the justification and optimisation of practices.
- Regulation on the conditions and measures for the protection against ionising radiation for conducting practices involving x-ray units, accelerators and other devices generating ionising radiation (2000).
- Regulation on the conditions and manner of obtaining the professional qualifications as a precondition for work with sources of ionising radiation (2000).
- Regulation on the health conditions, criteria, content, methods and intervals of maintaining of the records about medical surveillance of persons who operate sources of ionising radiation (2000).
- Regulation on the conditions, methods, premises and intervals of systematic environmental radiological monitoring (2000).

- Regulation on the conditions for authorisation of legal entities to perform specific expert practices in the field of radiation protection (1999). This Regulation, which entered into force on 29 October 1999, sets out requirements concerning the qualifications of at least two employees of the licence applicant and the working conditions of facilities and equipment used for expert activities. The licence for expert activities is valid for five years from its date of issue. The Croatian Agency for Radiation Protection is responsible for keeping the register of all legal entities licensed to perform ionising radiation protection activities.

Draft Legislation and Regulations

The emergency planning and preparedness programme is undergoing revision. It will be amended to extend its coverage to radiation exposure and/or contamination from all installations where radioactive materials are handled, instead of restricting its scope to neighbouring nuclear power plants (Krško NPP in Slovenia and Paks NPP in Hungary). In addition, it will provide for a compulsory emergency-monitoring programme. This programme has been approved by the competent ministries.

A draft Act on Nuclear Safety is in legislative process for adoption at the moment.

International Conventions

Nuclear Third Party Liability

- Croatia succeeded to the 1963 Vienna Convention on Civil Liability for Nuclear Damage on 29 September 1992 with effect in this country from 8 October 1991.
- Croatia acceded to the 1988 Joint Protocol relating to the Application of the Vienna Convention and the Paris Convention on 10 May 1994 and it entered into force in this country on 10 August 1994.

Other International Conventions

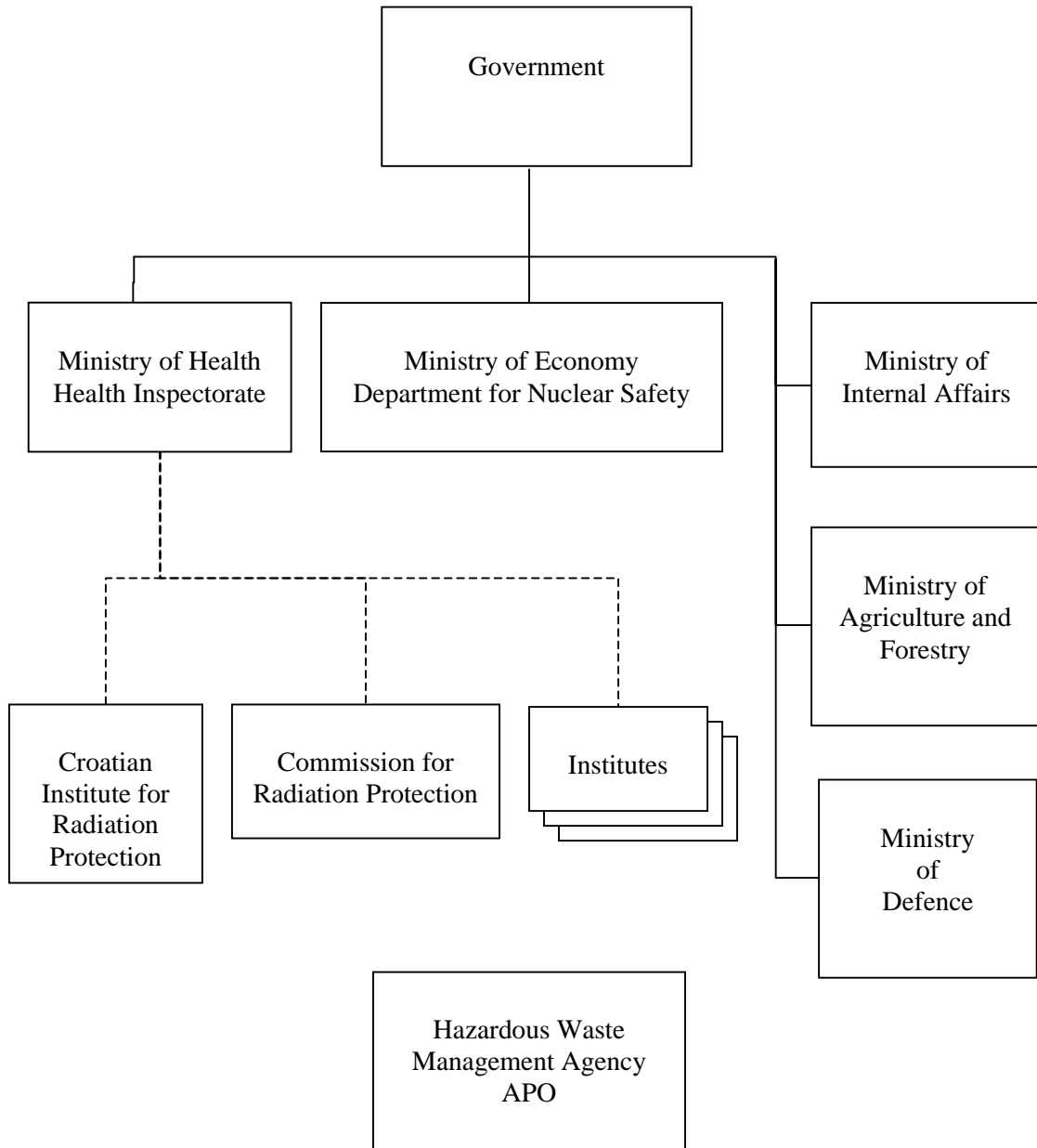
- Croatia succeeded to the 1963 Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and under Water on 29 September 1992 with effect in this country from 8 October 1991.
- Croatia succeeded to the 1968 Treaty on the Non-Proliferation of Nuclear Weapons on 29 June 1992 and it entered into force in this country on the same date.
- Croatia succeeded to the 1971 Treaty on the Prohibition of the Emplacement of Nuclear Weapons and other Weapons of Mass Destruction on the Sea Bed and the Ocean Floor and in the Subsoil thereof on 8 October 1991 and it entered into force in this country on the same date.
- Croatia ratified the 1972 Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter on 8 October 1991.

- Croatia succeeded to the 1979 Convention on the Physical Protection of Nuclear Materials on 29 September 1992 with effect in this country from 8 October 1991.
- Croatia succeeded to the 1986 Convention on Early Notification of a Nuclear Accident on 29 September 1992 with effect in this country from 8 October 1991.
- Croatia succeeded to the 1986 Convention on Assistance in case of a Nuclear Accident or Radiological Emergency on 29 September 1992 with effect in this country from 8 October 1991.
- Croatia approved the 1994 Convention on Nuclear Safety on 18 April 1996 and it entered into force in this country on 24 October 1996.
- Croatia ratified the 1996 Comprehensive Nuclear Test Ban Treaty on 2 March 2001.
- Croatia approved the 1997 Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management on 10 May 1999 and it entered into force in this country on 18 June 2001.

Membership in Nuclear Organisations

Croatia is a member of the International Atomic Energy Agency (IAEA).

CROATIA
Competent Authorities for Nuclear Energy



CZECH REPUBLIC

Introduction

The Czech Republic operates two nuclear power stations, at Dukovany in South Moravia and at Temelin in South Bohemia. The Dukovany nuclear power plant has four operational units (VVER-440/213), each of which has a thermal power of 1 375 MWt, representing a total installed capacity of 1 760 MWe. The Temelin nuclear power plant has two operational units (VVER-1000). The two units each have a thermal power of 3 000 MWt, representing a total installed capacity of 1 962 MWe. The Dukovany and Temelin NPPs now generate more than 40% of the total electricity production in the Czech Republic.

In addition, the Czech Republic has three research reactors (LVR-15 and LR-0 at the Nuclear Research Institute of Rez and VR-1P at the Czech Technical University of Prague), several radioactive waste storage facilities (such as the Richard repositories for institutional research and medical waste at Litomerice and the Bratstvi repository in Jachymov), a spent fuel interim storage facility and a low-level radioactive waste repository operated at Dukovany. In 2002, the Government approved a document entitled “The Concept of Radioactive Waste and Spent Fuel Management in the Czech Republic” prepared by the Ministry of Industry and Trade, which put forward a proposal to construct a deep geological repository for the direct disposal of spent fuel and other high level wastes. Siting evaluation for the repository is being carried out and will end in 2015 with the selection of two suitable sites. The final site will be chosen before 2025.

The utility CEZ a.s. (*Ceské Energetické Zavody, a.s.*) is principally responsible for electricity generation and high-voltage transmission throughout the Czech Republic, whereas eight separate companies are responsible for regional electricity distribution. The utility is responsible for the operation of nuclear installations. CEZ, which is a joint stock company with a majority participation of the State, reports to the Ministry of Industry and Trade.

Finally, the Czech Republic has uranium ore mining and production facilities and Diamo (formerly *Ceskoslovenský Uranový Průmysl – CSUP*), a state-owned company, acts as operator of all the uranium production facilities. It is responsible for the extraction and processing of uranium ore and has a national monopoly position. The last uranium mine is due to close by the end of 2005 and Diamo is currently implementing a programme for the restoration of former uranium mines under the supervision of the Ministry of Industry and Trade.

Competent Nuclear Authorities

The State Office for Nuclear Safety (*Státní úřad pro jadernou bezpečnost – SÚJB*) was set up by Act No. 21/1992 of 12 December 1992. Following the dissolution of Czechoslovakia, the Czech Republic transferred the responsibilities of the former Czechoslovak Atomic Energy Commission to SÚJB (Act No. 4/1993). SÚJB now constitutes the main state supervisory and regulatory body,

holding almost all regulatory responsibility for the safe use of nuclear energy and ionising radiation for peaceful purposes.

The powers of SÚJB were originally set out in Act No. 287 on the Competence of the State Office for Nuclear Safety of 11 November 1993 and by Act No. 85/1995, both of which, however, were repealed by the 1997 Atomic Act. This Act establishes SÚJB as the body that exercises administrative and supervisory authority over the uses of nuclear energy and ionising radiation, state supervision over nuclear safety and nuclear materials, including accounting and control, physical protection, radiation protection and emergency preparedness, as well as the management of radioactive waste and spent fuel. Furthermore, it is authorised to issue licences and to approve the transport and storage of nuclear materials and radionuclide sources. It is also responsible for the dissemination of information on radioactive waste management to municipalities and District Councils.

In addition, SÚJB supervises the functioning of the National Radiation Protection Institute and the National Institute for Nuclear, Chemical and Biological Protection. SÚJB also controls the activities of the national Radiation Monitoring Network and supervises the functioning of its head office. This Network is responsible for carrying out radiation assessments and collecting data on radiation exposure in the event of radiation accidents, in order to provide the background information necessary for SÚJB to make decisions aimed at reducing or avoiding exposure. SÚJB also ensures the functioning of the Emergency Response Centre and provides for the exchange of international data on the radiation situation. Control of radiation protection was previously vested in the Ministry of Health, but was transferred by the Czech Parliament to SÚJB on 19 April 1995 (Act No. 85/1995). Finally, SÚJB is responsible for co-operation with the IAEA.

SÚJB is headed by a Chairperson who is appointed by the Government. It is divided into three sections headed by Deputy Chairpersons and two units reporting directly to the Chairperson (Emergency Response Centre and the EU Unit). The sections are divided into departments and divisions. The Nuclear Safety Section is comprised of the Department of Nuclear Installations Assessment, the Department of Nuclear Installations Supervision and the Department of Nuclear Materials, including two local site inspectorates at Dukovany and Temelin.

The Radiation Protection Section consists of three departments: the Department of Radiation Sources, the Department of Regulation of Exposures and the Department of Radiation Protection in the Fuel Cycle Sector. This Section also co-ordinates seven Regional Centres which report via the various departments to the Head of the Radiation Protection Section.

The Management and Technical Support Section is comprised of four departments: the Department of International Co-operation, the Department of Financial Management and Administration (Budget & Finance), the Department of Chemical and Biological Weapons Ban Control and the Office Bureau, which includes a legal division.

In the Czech Republic, responsibility for developing governmental policy concerning the construction and operation of nuclear power plants and nuclear installations in general, as well as waste management and the decommissioning of nuclear installations, lies with the Ministry of Industry and Trade. The Ministry has the authority to:

- co-ordinate activities in the nuclear field in relation to the Government's energy policy;
- develop government policy in the nuclear area, including the management of radioactive waste and spent nuclear fuel;

- monitor the operation of the Dukovany and Temelin NPPs;
- propose strategic reserves of nuclear materials;
- prepare intergovernmental treaties in the nuclear field and participate in the development of domestic legislation.

The Ministry of the Interior is responsible for laying down the details of Crisis Regional Plans, Regional Emergency Plans and off-site emergency plans. These plans are prepared by the Ministry or by Regional Authorities pursuant to Act No. 239/2000 on Integrated Rescue Systems, as amended, and Act No. 240/2000 on Crisis Management, as amended.

The Ministry of the Environment is responsible for verifying that the procedures governing environmental impact assessment, which are a prerequisite for the licensing of various types of nuclear activities, are applied (Act No. 100/2001 on Environmental Impact Assessment). It also ensures meteorological support and participates in the operation of the Early Warning Network, which is a part of the national Radiation Monitoring Network (RMN) and in the monitoring of air and water contamination.

The Ministry of Defence performs state supervision over radiation protection in military premises and adopts measures to address any shortcomings identified. It also participates in the operation of the Early Warning Network and monitors points at road blocks and border crossings.

The Czech Office for Safety at Work, which concluded a co-operation agreement with SÚJB, supervises the conventional safety of technological equipment (pressure vessels, electrical systems, etc.).

The Czech Republic Central Crisis Staff advises and issues recommendations in the field of radiation protection to the Government in the case of a radiation accident or in relation to emergency preparedness issues, in co-operation with the SÚJB Crisis Staff.

Pursuant to the 1997 Atomic Act, a Radioactive Waste Repository Agency – RAWRA (*Správa uložist radioaktivních odpadů*) was established by the Ministry of Industry and Trade. It functions as a State organisation responsible for ensuring the safe disposal of radioactive waste and the monitoring and control of repositories during their operation and after their closure. The Agency is funded through levies imposed on the producers of radioactive waste. It is charged with organising the disposal of all radioactive waste and of irradiated fuel, if it has been declared as waste.

Finally, there are two research institutes in the field of nuclear energy. These are the Nuclear Research Institute of Rez, which operates two research reactors, and the Nuclear Physics Institute also at Rez, which is a part of the Czech Academy of Science and which operates an accelerator. Some other institutes also participate in nuclear research on an ad hoc basis.

Legislation in Force

Act on the Peaceful Uses of Nuclear Energy and Ionising Radiation and on Amendments and Additions to Related Acts (as amended)

The Act on the Peaceful Uses of Nuclear Energy and Ionising Radiation and on Amendments and Additions to Related Acts (the Atomic Act),¹ which governs all nuclear activities, was adopted on 24 January 1997 and fully entered into force on 1 July 1997. The Atomic Act repealed, among others, Act No. 28/1984 of 22 March 1984 on State Supervision of Nuclear Safety and of Nuclear Installations of the former Czechoslovakia. This Act has been amended on several occasions since its adoption (Act No. 83/1998, Act No. 71/2000, Act No. 132/2000, Act No. 13/2002, Act No. 310/2002 and Act No. 320/2002), the most important amendments having been introduced by Act No. 13/2002, which was adopted on 18 December 2001 and entered into force on 1 July 2002, with the exception of certain provisions which will enter into force upon the date of accession of the Czech Republic to the European Union.

The Atomic Act, together with its implementing regulations, creates a legal basis for the regulation and control of all activities related to the utilisation of nuclear energy and ionising radiation in the Czech Republic and the protection of the public and the environment against the harmful effects of ionising radiation. Furthermore, the Act aims to ensure that nuclear energy and ionising radiation are used exclusively for peaceful purposes and that the benefits of its use are balanced against potentially harmful effects.

The Act contains five Parts divided into 50 Articles. Part I forms the main body of the Act and lays down the general conditions governing activities related to the use of nuclear energy and ionising radiation, including rules related to the protection of people and the environment against the harmful effects of ionising radiation, radioactive waste management and civil liability for nuclear damage. Parts II-IV are devoted entirely to amendments of related legislation, while Part V contains some general transitional and final provisions. The Annex to the Atomic Act lists the documentation required for particular licensed activities.

The provisions of the Atomic Act apply principally to the following activities:

- design, siting, construction, commissioning, operation, reconstruction and decommissioning of nuclear installations;
- design, manufacture, repair and verification of nuclear installation systems or their components, including materials used for their production;
- design, production, repair and verification of packaging assemblies for transportation, storage or disposal of nuclear materials;
- handling of nuclear materials and of selected items and, in the case of their use in the nuclear field, also of dual use items;
- research and development into the activities mentioned above;

1. The full text in English of this Act as adopted in 1997 (i.e. before subsequent amendments) and was reproduced in the Supplement to the *Nuclear Law Bulletin* No. 61 (June 1998) and is available on the NEA Web site at: www.nea.fr/html/law/nlb/NLB-61/czech.pdf.

- professional training of persons specialised in nuclear safety;
- transport of nuclear materials; and
- all other practices resulting in exposure to ionising radiation.

The Atomic Act appoints SÚJB as the competent body for the licensing and inspection of nuclear facilities and workplaces using ionising radiation. A licence is required for a number of activities involving the use of nuclear energy, such as the siting, construction, commissioning, operation and decommissioning of workplaces using significant ionising radiation sources and of nuclear installations; discharge of radionuclides into the environment; the management and transport of ionising radiation sources, nuclear material or radioactive sources; professional training of personnel; re-import of radioactive waste generated from the processing of materials exported from the Czech Republic; the international transport of radioactive waste; performance of radiation services such as personal dosimetry and the addition of radioactive substances to consumer products or the import/export of such products. Details concerning licence applications are set out in the regulations implementing the Atomic Act.

Inspections of nuclear installations are carried out by nuclear safety and radiation protection inspectors employed by SÚJB. The inspectors are appointed by the chairperson of SÚJB to ensure compliance with technical specifications for nuclear safety, operational instructions and conditions, and radiation and physical protection measures. In addition, inspectors check emergency preparedness and the qualifications of the facility's personnel.

The management of radioactive waste is also governed by the Atomic Act which sets out general duties and provides a definition of radioactive waste. It also names the Radioactive Waste Repository Agency as responsible for disposal of radioactive waste or of irradiated fuel, if it has been declared waste by the generator or by SÚJB.

The Act provides that the provisions of international agreements to which the Czech Republic is a Party are applicable for the purposes of civil liability for nuclear damage. In this case, the relevant agreements are the 1963 Vienna Convention and the 1988 Joint Protocol relating to the Application of the Vienna and Paris Conventions. The Act also provides that the provisions of general legislation which deal with liability for nuclear damage are applicable to the extent that this Act or international agreements do not expressly exclude their application.

In accordance with the above-mentioned international agreements, the licence-holder for a nuclear installation or for the transport of nuclear materials is considered as the operator liable for nuclear damage.

Procedural aspects dealing with compensation for nuclear damage are governed by general legislation of the Czech Republic applicable on the matter, including Act No. 40/1964 (Civil Code), Act No. 425/1990 on District Councils and Act No. 254/1994.

The Act does not provide a specific definition of nuclear damage; however it does specify that this damage includes the cost of preventive measures or measures to restore the original state of the environment if these measures are justified.

The third-party liability of the operator is fixed at a maximum amount of 6 billion Czech crowns (CZK)² per nuclear installation used for the production of electricity and per nuclear accident. This limit also applies to storage facilities and repositories for radioactive waste and spent nuclear fuel, as well as nuclear materials generated by the processing of fuel. However, liability is limited to CZK 1.5 billion³ for lesser risk nuclear installations and for transport operations.

Licence-holders are obliged to take out an insurance policy, with an insurer approved pursuant to Act No. 185/1991, to cover third-party liability for nuclear damage. Detailed conditions concerning insurance policies and other types of financial security are established by the Ministry of Finance in conjunction with SÚJB and the Ministry of Industry and Trade. In any case, the Act specifies that the activities for which the ceiling for liability is set at CZK 6 billion (this category includes nuclear installations generating electric power and all storage facilities of these installations for spent fuel and/or nuclear material originating from spent fuel) must be covered by an insurance policy for at least CZK 1.5 billion; activities for which the ceiling is set at CZK 1.5 billion (this category includes all other nuclear installations and transportation of nuclear material) must be covered by insurance for at least CZK 200 million.

In order to adequately cover the liability claims, a nuclear insurance pool was established in the Czech Republic in July 1995. The Pool is called “*Kancelar Ceskeho Jaderneho Poolu*” and consists of specialised insurance and reinsurance companies. The Pool is based on fundamental principles common to all nuclear pools.

Finally, the Atomic Act provides for State guarantees to ensure compensation up to the established limits of liability if requests for compensation exceed the amount of mandatory insurance of the operator. The State guarantees will cover amounts up to CZK 6 billion with respect to facilities with mandatory insurance of CZK 1.5 billion and CZK 1.5 billion for facilities with mandatory insurance of CZK 200 million (low risk facilities and transport). However, the State’s right of recourse against the operator will not be affected. The time limit for bringing claims for compensation will be ten years from the occurrence of the nuclear incident with a time limit of three years from the moment the victim has discovered the damage.

The main purpose of Amending Act No. 13/2002 is to ensure full implementation of the relevant EU legislation into Czech law, in particular Council Directive 96/29/Euratom of 13 May 1996 laying down basic safety standards for the protection of the health of workers and the general public against the dangers arising from ionising radiation, and to guarantee observance of the Czech Republic’s international obligations under the Comprehensive Nuclear Test Ban Treaty and the Additional Protocol to the Safeguards Agreement between the Czech Republic and the International Atomic Energy Agency. With regard to radiation protection, new provisions specify the various types of exposure (occupational exposure, medical exposure, emergency exposure of individuals or of emergency personnel, long-term exposure and potential exposure) and deal with supervised and controlled areas, radiation workers and clearance levels. Outside workers are now required to have a personal radiological monitoring document. Intentional addition of radioactive substances to foodstuffs, toys, jewellery or cosmetic products, or the import or export of such contaminated products, are prohibited. The shipment of radioactive waste to some specific zones is also prohibited.

2. On 1 December 2003, CZK 6 billion corresponded approximately to EUR 188 million.

3. On 1 December 2003, CZK 1.5 billion corresponded approximately to EUR 47 million.

Regulations implementing the Atomic Act

Numerous regulations implementing the provisions of the Atomic Act are now in force. These regulations are mostly based on documents and guidelines issued by the IAEA and on EU legislation.

The implementing legislation currently in force is as follows:

- Decree No. 144/1997 on Physical Protection of Nuclear Materials and Nuclear Facilities and their Classification;
- Decree No. 145/1997 on the National Safeguards System for Nuclear Materials and on their Detailed Categorisation, as amended by Decree No. 316/2002: The amending Decree set out some new requirements relating to the system of Euratom safeguards and creates conditions for future application of the relevant EU legislation, e.g. Council Regulation 76/3227/Euratom;
- Decree No. 146/1997 establishing Measures having a Direct Impact on Nuclear Safety and Radiation Protection, Requirements on Special Professional Qualifications, Verification of such Qualifications and Licensing of Selected Personnel, as amended by Decree No. 315/2002. The Amending Decree harmonised certain definitions with the provisions of EU legislation and reinforced requirements in relation to qualifications and professional training (implementation in particular of Council Directives 97/43/Euratom and 96/29/Euratom);
- Decree No. 214/1997 on Quality Assurance During Activities Connected with the Utilisation of Nuclear Energy and Practices Leading to Exposure, and establishing Criteria for Categorisation of Selected Equipment into Safety Classes;
- Decree No. 215/1997 on Criteria for Siting Nuclear Facilities and Very Significant Radiation Sources;
- Decree No. 106/1998 on Nuclear Safety and Radiation Protection Assurance during Commissioning and Operation of Nuclear Facilities;
- Decree No. 195/1999 on Basic Safety Criteria for Nuclear Installations with Respect to Nuclear Safety, Radiation Protection and Emergency Preparedness;
- Governmental Order No. 11/1999 on Emergency Planning Zones;
- Decree No. 179/2002 establishing a List of Selected Items and Dual Use Items in the Nuclear Sector;
- Decree No. 307/2002 on Radiation Protection: this Decree lays down basic safety standards for protection of the health of workers and the general public against the dangers arising from ionising radiation, implementing the relevant EU legislation;
- Decree No. 317/2002 on Type Approval of Packaging Assemblies for Transport, Storage and Disposal of Nuclear Materials and Radioactive Substances, on Type Approval of Ionising Radiation Sources and on Transport of Nuclear Materials and Specified Radioactive Substances;

- Decree No. 318/2002 on the Details of Emergency Preparedness of Nuclear Facilities and Workplaces with Ionising Radiation Sources and on Requirements on the Content of the On-site Emergency Plan and Emergency Rules;
- Decree No. 319/2002 on Performance and Management of the National Radiation Monitoring Network;
- Decree No. 419/2002 on Personal Radiation Passports;
- Governmental Order No. 416/2002 establishing Amount and Method of Payment of Contributions due by Radioactive Waste Generators to the Nuclear Account and the Amount of Contributions due to the Municipality;
- Decree No. 360/2002 establishing the Method of Setting up Reserves for the Decommissioning of Nuclear Installations or Type III and IV Workplaces;
- Decree No. 107/2003 on the Participation of the Regional Authority in the Distribution of Grants to Identify and Address Risks Resulting from the Presence of Radon and its Derivatives inside Buildings and in Water for Public Consumption;
- Decree No. 185/2003 on Decommissioning of Nuclear Installations or Type III and IV Workplaces.

Other Relevant Legislation

The construction of nuclear installations is also governed by Act No. 50/1976 on Civil Construction (the Construction Code). Act No. 50/1976 establishes the powers of the Civil Construction Office which is the responsible body at district level for making decisions in regard to the siting, construction and permanent operation of any civil construction, including nuclear facilities. Pursuant to this Act and the Atomic Act, an applicant is required to collect the respective approval of SÚJB and of all other bodies concerned, and to submit all the relevant documentation to the Construction Office. This Office will then take the final decision concerning the licence sought, whether for site approval, construction or operation.

Prior to its construction, each nuclear installation must also follow the procedure set out in Act No. 100/2001 on Environmental Impact Assessment.

Government Decision No. 290/1995 sets out a list of occupational diseases, which includes afflictions resulting from occupational exposure to ionising radiation such as health disorders induced by ionising radiation, lung cancer caused by radioactive substances and skin diseases induced by physical, chemical or biological factors.

International Conventions

Nuclear Third Party Liability

- The Czech Republic acceded to the 1963 Vienna Convention on Civil Liability for Nuclear Damage on 24 March 1994 and it entered into force in this country on 24 June

1994. The Czech Republic signed the 1997 Protocol to Amend the Vienna Convention on Civil Liability for Nuclear Damage on 18 June 1998.

- The Czech Republic acceded to the 1988 Joint Protocol relating to the Application of the Vienna Convention and the Paris Convention on 24 March 1994 and it entered into force in this country on 24 June 1994.
- The Czech Republic signed the 1997 Convention on Supplementary Compensation for Nuclear Damage on 18 June 1998.

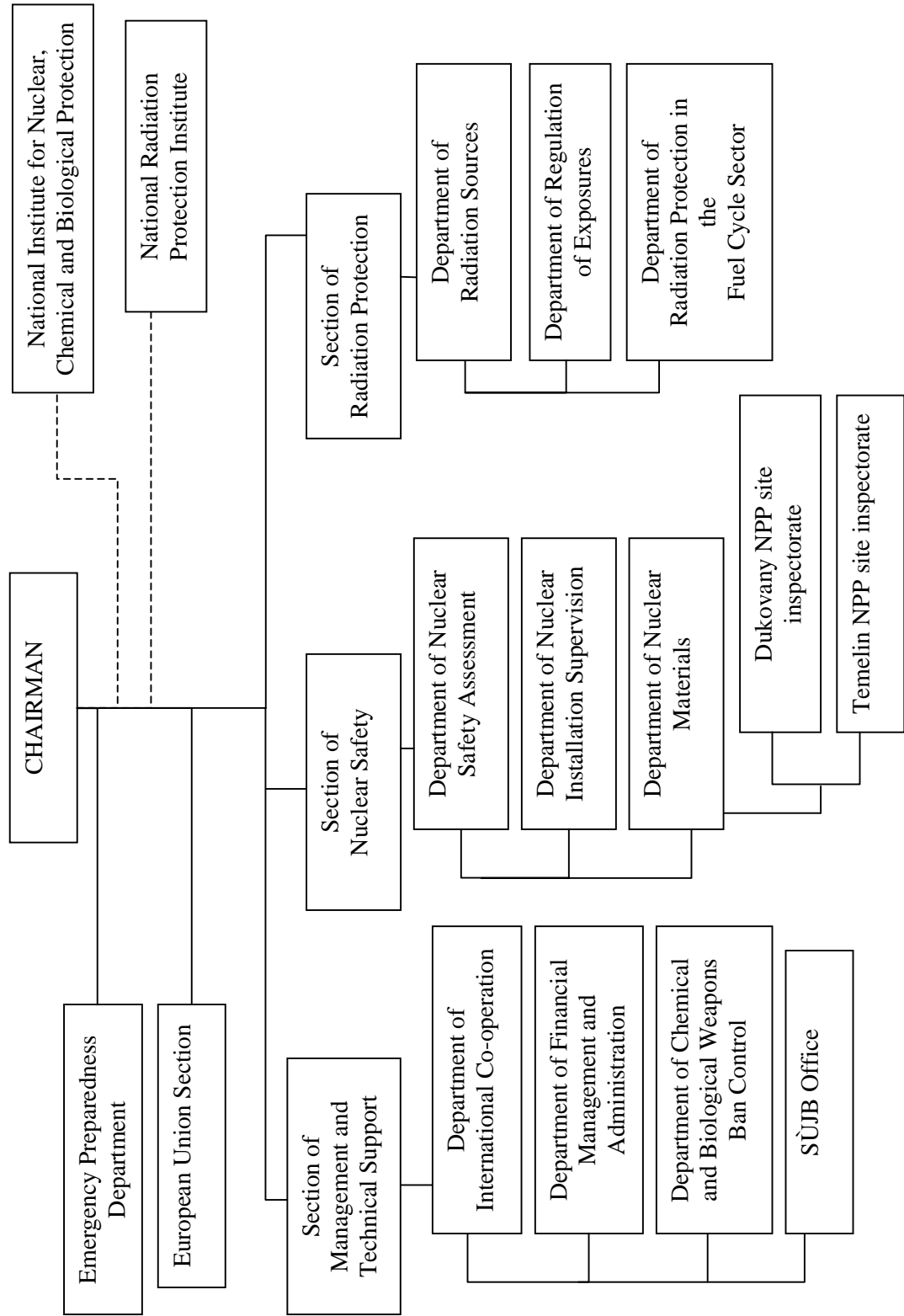
Other International Conventions

- The Czech Republic succeeded to the 1960 Convention concerning the Protection of Workers against Ionising Radiation on 1 January 1992 and it entered into force in this country on 1 January 1993.
- The Czech Republic succeeded to the 1963 Treaty Banning Nuclear Weapons Tests in the Atmosphere, in Outer Space and under Water on 1 January 1993 and it entered into force in this country on the same date.
- The Czech Republic succeeded to the 1968 Treaty on the Non-Proliferation of Nuclear Weapons on 1 January 1993 and it entered into force in this country on the same date.
- The Czech Republic succeeded to the 1971 Treaty on the Prohibition of the Emplacement of Nuclear Weapons and other Weapons of Mass Destruction on the Sea Bed and the Ocean Floor and in the Subsoil thereof on 2 December 1992 and it entered into force in this country on 1 January 1993.
- The Czech Republic succeeded to the 1979 Convention on the Physical Protection of Nuclear Material on 24 March 1993 with effect in this country from 1 January 1993.
- The Czech Republic succeeded to the 1986 Convention on Early Notification of a Nuclear Accident on 24 March 1993 with effect in this country from 1 January 1993.
- The Czech Republic succeeded to the 1986 Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency on 24 March 1993 with effect in this country from 1 January 1993.
- The Czech Republic approved the 1994 Convention on Nuclear Safety on 18 September 1995 and it entered into force in this country on 24 October 1996.
- The Czech Republic ratified the 1996 Comprehensive Nuclear Test Ban Treaty on 11 September 1997.
- The Czech Republic ratified the 1997 Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management on 25 March 1999 and it entered into force in this country on 18 June 2001.

Membership in Nuclear Organisations

The Czech Republic is a member of the International Atomic Energy Agency (IAEA) and it joined the OECD Nuclear Energy Agency in 1996. The Czech Power Company (CEZ) is a member of the World Association of Nuclear Operators (WANO). The Czech Republic is a member of the Nuclear Suppliers Group and the Zangger Committee.

CZECH REPUBLIC
State Office for Nuclear Safety (SÚJB)



ESTONIA

Introduction

At present, Estonia does not pursue a national nuclear energy programme and there are no nuclear power plants or other installations on its territory.

There are, however, two partly decommissioned nuclear reactors and nuclear waste repositories in Paldiski (the former Soviet Naval training centre). These installations remained under Russian ownership and control until 26 September 1995, at which time the ownership of, the responsibility for, and Russia's remaining obligations to the centre, were transferred to Estonia. Estonia has established a Radioactive Waste Management Agency, ALARA Ltd, a state-owned company, to manage the Paldiski site. In Sillamäe (northeast Estonia) there is a repository of uranium mining and milling waste, which belonged to a former Soviet nuclear fuel cycle factory. It is one of the largest depositories of this kind in Central and Eastern Europe. At present the non-decommissioned repository is used by a private company, SILMET, for storage of its waste. The Tammiku repository for low and intermediate-level radioactive waste located near Tallin has been closed.

Competent Nuclear Authorities

The Government has granted jurisdiction over nuclear energy activities to competent ministries while retaining jurisdiction over defence matters. It has also established conditions and rules for the licensing of activities related to ionising radiation (safety, radiation levels, etc.).

The Ministry of the Environment and the Ministry of Social Affairs have primary responsibility over nuclear and radiological issues. The Ministry of the Environment has jurisdiction over environmental supervision, including radiation protection. The Estonian Radiation Protection Centre (ERPC), which was founded in January 1996 as a state agency and which reports to the Ministry of the Environment is responsible for radiation protection and exercises rights of control. It monitors compliance with official documents issued by the Government and supervises all radiological activities including, *inter alia*:

- issue of licences;
- regulation of surrounding radiation levels and assessment of exposure;
- maintenance of the dose registry and radiation source registry;
- implementation of the obligations contained in international conventions and agreements;

- management of the system for early warning and notification of radiological emergencies.

The ERPC is also responsible for drafting legislation in the field of radiation protection and informing the population on radiation safety issues.

Pursuant to the Environmental Supervision Act of 2001, the Environmental Inspectorate exercises radiation protection supervision. This institution, which is under the authority of the Ministry of the Environment, fulfils its responsibilities in close co-operation with the Radiation Protection Centre.

The Ministry of Social Affairs is responsible for supervising the health of radiation workers and persons exposed for medical purposes.

The Ministry of Internal Affairs is responsible for the internal security of the State and the protection of the public as well as emergency preparedness and management.

By Order of 10 May 1995, the Government formed a state-owned company, the Estonian Radioactive Waste Management Agency – ALARA Ltd., which was set up in July 1995. This company, which reports to the Ministry of Economic Affairs, is the new operator of the Paldiski facilities. It is responsible for the general management of the site, development and implementation of projects related to radioactive waste management including installation decommissioning and waste storage and disposal, and general radioactive waste management at national level. In addition, it also subcontracts maintenance and construction work which does not involve radiation at the Paldiski site. Its operational, investment and administrative costs are funded on an annual basis from the State budget.

Legislation in Force

Radiation Act

On 8 May 1997, the President of Estonia promulgated the Radiation Act,¹ which had been adopted by the Parliament on 23 April 1997. This Act is the principal legal instrument in the field of radiation protection of workers, the public and the environment. It has since been amended several times, the last amendment dating from September 2002.

The Radiation Act is based on concepts, principles and dose limits stipulated in the International Basic Safety Standards (IAEA Safety Series No. 115-1) and Council Directive 96/29/Euratom laying down basic safety standards for the protection of the health of workers and the general public against the dangers arising from ionising radiation. Accordingly, the basic principles incorporated in the Act are as follows:

- justification of practices involving ionising radiation;
- optimisation of protection and safety;

1. The full text of this Act in English was reproduced in the Supplement to *Nuclear Law Bulletin* No. 61 (June 1998) and is available on the NEA Web site at: www.nea.fr/html/law/nlb/NLB-61/estfin.pdf.

- limitation of individual doses;
- primary responsibility of the licensee; and
- licensing of ionising radiation practices.

The Radiation Act defines the institutional framework for, and establishes the rules applicable to, the possession and the use of ionising radiation sources, the transport of radioactive materials, radioactive waste disposal and other activities which cause or may cause harm to health or to the environment. It also contains general provisions on radioactive waste management and on import and export of such waste, including a prohibition against import of radioactive waste for final disposal.

Although its prime concern is radiation protection, the Radiation Act also regulates certain nuclear safety issues, such as the use, management and transport of radioactive substances and radioactive waste. In this way the Act constitutes a legal basis for the implementation of safeguards and measures to enforce the provisions of international conventions on nuclear safety. The Act authorises the Parliament to make decisions concerning the commissioning of nuclear facilities. All other nuclear activities are to be covered by a specific law.

The Act provides for a system of licensing covering all activities using ionising radiation. The conditions which must be satisfied by the applicant in order to obtain a licence, such as safety requirements and levels of radiation emitted, are expressly set out in the Act. It authorises the Estonian Radiation Protection Centre to issue licences under the control of the Ministry of the Environment. The Act provides that the holder of a licence for an ionising radiation activity, or the user of a radiation source, must guarantee radiation safety and shall be liable for any damage caused.

The Centre is also empowered under the Act to inspect radiation sources and to maintain dose and source registers. It is responsible for enforcing the provisions of the Act. Medical radiation exposure of patients is, on the other hand, regulated and supervised by the Ministry of Social Affairs.

The Radiation Act specifies the accepted dose limits for occupational exposure of employees working with radiation, for apprentices, for students and for pregnant women. These limits, as well as the dose limits of radiation exposure for the public, are directly based on those of the IAEA Basic Safety Standards.

Finally, the Act empowers the Government and ministers to enact implementing regulations on exemption levels, dose limits, safety requirements for sources and facilities, maximum permissible levels, etc.

Emergency Preparedness Act

The Emergency Preparedness Act, which entered into force on 1 January 2001, provides the legal basis for the organisation of emergency preparedness and crisis management by the Government, state agencies and local governments. The objectives of crisis management are defined as follows:

- to perform risk assessment in order to identify possible emergencies;
- to determine the possibilities of avoiding emergencies or mitigating the consequences thereof;

- to prepare crisis management plans and organise training;
- to build up the structure of units for responding to emergencies and ensure their resources;
- to organise the information of the population and raise public awareness on responding to emergencies;
- to rapidly restore vitally important sectors to operation.

The Act provides for establishment of a permanent crisis management committee in order to harmonise and co-ordinate crisis management activities.

Act on Export, Import and Transit of Strategic Goods

This Act, adopted on 16 June 1999, states that the export, import and transit of strategic goods are subject to a licence. “Strategic goods” include, *inter alia*, nuclear technology, related materials and facilities, nuclear waste and uranium ores. Licences for carrying out these activities are issued by an Interdepartmental Commission set up for this purpose.

Environmental Impact Assessment and Environmental Auditing Act

The Environmental Impact Assessment and Environmental Auditing Act entered into force on 1 January 2001. Its list of activities with significant environmental impact includes:

- construction, dismantling and decommissioning of NPPs and other nuclear installations;
- reprocessing of irradiated nuclear fuel;
- production or enrichment of nuclear fuel or processing of radioactive waste;
- construction, reconstruction or removal of installations for temporary storage or final disposal of radioactive waste.

The Act establishes an important role for the public in decision-making on such activities.

Other Relevant Legislation

Following the adoption of the 1997 Radiation Act, a number of implementing decrees have been adopted.

Decree on the Issue of Licences for Radiation Practices

This Decree No. 58 of the Minister of the Environment, adopted on 6 August 1997, establishes the duties of applicants and the ERPC in relation to the issue of licences for activities involving radiation. The ERPC is authorised to assess all such licence applications and to issue licences which

will remain valid for up to five years. Model application forms and standard licence forms are annexed to this Decree.

Decree on the Registration of Radiation Sources

This Decree of the Minister of the Environment, adopted on 6 November 1997, regulates the ERPC's procedure for registering radiation sources, establishes a national radiation source register and introduces detailed requirements for licensees upon their registration. The register is maintained by the ERPC.

Decree on Exemption Levels for Radiation Sources

This Government Decree adopted on 30 January 1998 establishes the maximum limits for amounts of radioactive substances and their specific activity below which activities involving such substances are exempted from the licensing requirements which normally apply to activities involving radiation. The Decree also provides for clearance levels for radioactive sources, materials and waste.

Decrees on Radiation Safety Factors

These Decrees adopted by the Minister of the Environment on 25 March 1998, 8 September 1998 and 13 May 1999, enforce radiation values and tissue weighting factors, as set out by the International Commission on Radiological Protection, the Order on the verification of dose limits applicable to radiation workers and to the public, dose levels, maximum limits and guidelines for intervention in emergency exposure situations, and maximum limits for naturally occurring radionuclides in chronic exposure situations. All the basic principles, terms and levels established in the relevant IAEA Basic Safety Standards and EU Directives on transport are incorporated.

Decree on Safe Transport of Radioactive Materials

This Government Decree, adopted on 4 August 1998, enacts rules for the safe transport of radioactive materials, including radioactive waste. Its dispositions harmonise existing local transport legislation with the requirements of IAEA technical regulations and EU Directives. The Decree contains general provisions on radiation safety and emergency response; activity and fissile material limits; requirements for packaging, marking, labelling, transport and storage in transit; administrative requirements; and documentation.

Decree Establishing the Procedure for Management, Registration and Transfer of Radioactive Waste

This Decree of the Minister of the Environment, adopted on 8 September 1998, imposes detailed requirements for radioactive waste management, governing, *inter alia*, storage and disposal of radioactive waste and radioactive waste management facilities. The Decree incorporates the requirements of the IAEA RADWASS Safety Standards to the extent appropriate for activities involving radioactive waste. It also sets out safety criteria for the siting, design and operation of waste management facilities.

Decree Establishing a National Dose Register for Radiation Workers and Laying Down the Procedure for Accreditation of Radiation Workers and for the Issue of Certificates

This Government Decree, adopted on 4 February 1999, determines the data necessary for the assessment of radiation doses resulting from occupational exposure. The procedure for accrediting radiation workers and for issuing certificates governs the control over the knowledge and professional qualifications of radiation workers with regard to the conditions and nature of the radiation activities concerned.

Decree Establishing the Requirements concerning the Safe Use of Premises and Buildings Housing a Radiation Source and their Structure and the Requirements for the Safe Operation of the Radiation Source

This Decree, adopted on 3 September 1999, establishes requirements for controlled and supervised areas and for the safe operation of radiation sources.

In addition, there are certain provisions in other legal instruments which address, indirectly, issues of nuclear safety or radiation protection. Examples include:

- Article 123 of the Constitution of Estonia, which provides that international treaties ratified by the Parliament will supersede domestic legislation or other texts which conflict with such treaties;
- Article 53 of the Constitution, which stipulates the obligation to protect the public and the natural environment, and provides for the possibility of receiving compensation in the case of damage;
- Sections 26, 41 and 42 of the Act on the General Principles of the Civil Code, which entitle all persons to claim compensation for moral or material injury resulting from the violation of their rights. The person responsible for this violation is exclusively liable for such compensation; and
- Sections 48 and 52 of the Act on the Protection of Nature deal with the same rights and obligations as regards compensation in the context of environmental damage.

Draft Legislation and Regulations

In order both to harmonise estonian domestic legislation with EU legislative requirements in the field of radiation protection and nuclear safety and to address the lacunae and existing insufficiencies in the Radiation Act, a new draft Radiation Act and a number of secondary legal acts are under preparation. It aims to:

- establish more clearly the competence of the Government, districts, municipalities, ministries and the ERPC in the field of radiation protection;
- establish more specifically the rights and responsibilities of the ERPC and operators in the field of radiation protection;
- set up a categorisation system for exposed workers;

- establish the duties, in respect of the protection of exposed workers, of registered medical practitioners, certified occupational health services and qualified experts, and to set up means of recognising their capacity;
- provide for decommissioning nuclear facilities as a licensable activity.

International Conventions

Nuclear Third Party Liability

- Estonia acceded to the 1963 Vienna Convention on Civil Liability for Nuclear Damage on 9 May 1994 with the reservation that Estonia would not be liable for damage resulting from nuclear installations or nuclear material located on its territory if the operator is of foreign nationality. The Convention entered into force in this country on 9 August 1994.
- Estonia acceded to the 1988 Joint Protocol relating to the Application of the Vienna Convention and the Paris Convention on 9 May 1994, and it entered into force in this country on 9 August 1994.

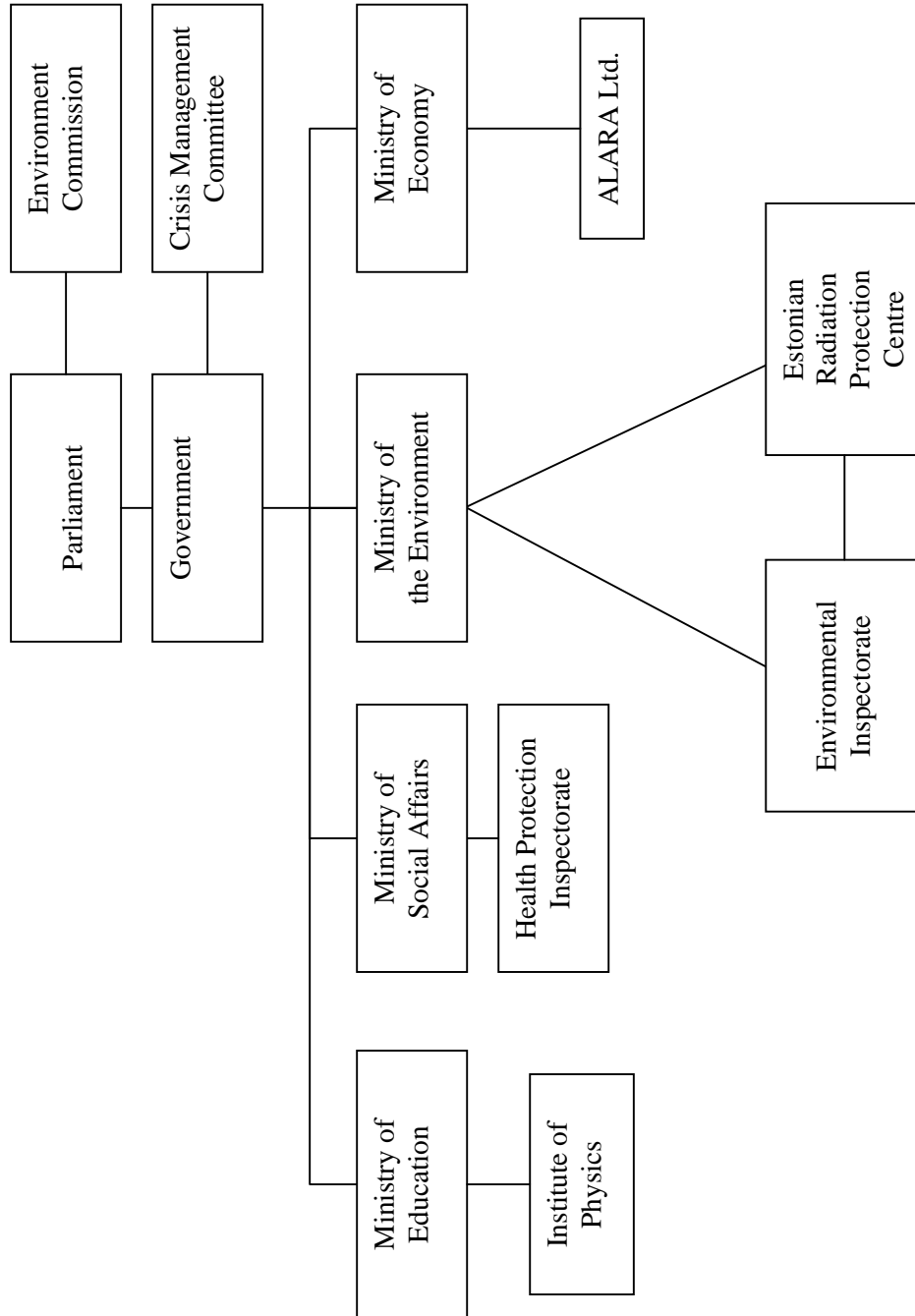
Other International Conventions

- Estonia acceded to the 1968 Treaty on the Non-Proliferation of Nuclear Weapons on 7 January 1992 and it entered into force in this country on 31 January 1992.
- Estonia acceded to the 1979 Convention on the Physical Protection of Nuclear Material on 9 May 1994 and it entered into force in this country on 9 June 1994.
- Estonia acceded to the 1986 Convention on Early Notification of a Nuclear Accident on 9 May 1994 and it entered into force in this country on 9 June 1994.
- Estonia acceded to the 1986 Convention on Assistance in Case of a Nuclear Accident or Radiological Emergency on 9 May 1994 and it entered into force in this country on 9 June 1994.
- Estonia ratified the 1996 Comprehensive Nuclear Test Ban Treaty on 13 August 1999.
- Estonia signed the 1997 Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management on 5 January 2001.

Membership in Nuclear Organisations

Estonia is a member of the International Atomic Energy Agency (IAEA).

ESTONIA
Institutions in the Field of Nuclear Safety and Radiation Protection



GEORGIA

Introduction

There are no nuclear power plants or reactors in Georgia at present. However, there is a pool-type (IRT-2000) nuclear research reactor (8 MWe) at the Institute of Physics of the Academy of Sciences in Mtskheta, which was commissioned in 1959 and shut down in 1988.

Competent Nuclear Authorities

Pursuant to the 1998 Law on Nuclear and Radiation Safety, the Ministry for Protection of the Environment and Natural Resources is primarily responsible for protecting the environment and natural resources from the effects of radiation, ecological safety and nuclear and radiation-related activities. The Ministry is responsible for:

- organising state regulation and control in the nuclear and radiation safety field, controlling and supervising its implementation;
- drafting and adoption of regulatory instruments relating to non-proliferation of nuclear weapons and material and to nuclear and radiation safety;
- drafting and approval of requirements in relation to licensing conditions for nuclear and radiation-related activities;
- periodic monitoring of the operating conditions at nuclear and radiation facilities to ensure compliance with the terms of their licences;
- drafting and submitting nuclear emergency response plans to the President for approval;
- approval of central and local emergency plans;
- supervision of physical protection systems;
- establishing and monitoring an accounting system and a state inventory of nuclear material, radioactive substances and other ionising radiation sources;
- adoption of regulations governing a radioactive waste register and a register for the transport of nuclear material, radioactive substances and other ionising radiation sources within Georgia;
- monitoring radiation in the environment.

For the purposes of supervising nuclear and radiation-related activities, the Ministry has the right to inspect and monitor such activities, check any technical, regulatory and other documentation, and carry out any measurements required for supervision.

The State Technical Supervisory Inspectorate is responsible for supervising the technical safety of nuclear and radiation-related activities.

The Labour Inspectorate of the Ministry for Social Security, Labour and Employment is responsible for overseeing work safety in nuclear and radiation facilities.

The Ministry for Urbanisation and Construction is responsible for supervising nuclear and radiation facility construction projects and civil engineering activities.

The Ministry for Health is responsible for state supervision with a view to preventing harmful effects to man caused by breaches of the health and hygiene regulations and standards.

The Ministry for Internal Affairs is responsible for instructing citizens on emergencies, planning and control of preventive measures, approval of emergency action plans and physical protection of nuclear and radiation facilities.

The Ministry for State Security and the Ministry for Defence are responsible for physical protection of nuclear and radiation facilities and, in the event of a nuclear accident, for decontamination.

According to the Law on Export Control of Armaments, Military Equipment and Dual-Use Products of 28 April 1998, the executive bodies of Georgia in the field of export control are responsible for:

- ensuring direct implementation of state policy on export control;
- co-operating with the Standing Interagency Commission on Military-Technical Issues of the National Security Council, in defining lists of products subject to export control and submitting them to the President of Georgia for confirmation;
- controlling the import, export and transit of products subject to control through authorised bodies;
- providing expert review of applications for export;
- preventing illegal transfer of products subject to export control through customs.

Legislation in Force

Law on Nuclear and Radiation Safety

The Law on Nuclear and Radiation Safety was adopted on 30 October 1998 and entered into force on 1 January 1999. It aims to protect the public and the environment from the harmful effects of ionising radiation. Under the Law, uses of nuclear energy are restricted to peaceful purposes. Consequently, the export, import, transit and re-export of nuclear weapons and other nuclear explosive devices is prohibited, as is their production, study, testing and possession. It is similarly prohibited to construct and operate nuclear facilities with a capacity of over 5 MWe and to import radioactive waste into Georgia. The Law sets out the following basic principles:

- the use of nuclear energy, nuclear material and any other ionising radiation source must not result in negative effects on public health or cause damage to the environment and to property;
- a licensee is required to compensate nuclear damage caused to human health, property and the environment;
- the physical protection of nuclear material, radioactive substances, know-how and related documentation must be ensured;
- emergency planning must be put in place;
- information on radioactive contamination of the environment, accidents or other emergencies must be accessible to the public;
- the principles of standardisation, justification and optimisation when using nuclear energy as well as minimisation of the negative effects of radioactive waste must be complied with;
- following a radiation accident, restoration measures must be taken.

The Law sets out the functions of various competent bodies in the nuclear and radiation safety field (see *supra* Competent Nuclear Authorities). It also provides for a licensing regime for nuclear and radiation-related activities. Licences for the construction, modification and operation of nuclear and radiation facilities include requirements for nuclear and radiation safety, on-site pre-treatment of radioactive waste or transport of such waste to a storage facility, and dismantling of the plant, equipment and instruments used at such facilities. Safety requirements cover siting, design, construction, and modification of the facilities. Construction and modification of facilities are subject to a feasibility study as well as a state expert appraisal of the project's safety. During the operation of nuclear and radiation facilities, the licensee is required to ensure safe working conditions and physical protection. The licensee must also prepare an emergency plan. In the event of breach of related standards and regulations, the operation of nuclear or radiation facilities may be suspended and the facilities may be shut down.

The Law sets out criteria for classifying a nuclear accident into one of the seven categories prescribed by the Law, these being in line with the INES scale. In the event of an accident, the licensee must take measures to ensure the protection of both workers and the public from radiation, and in particular it must inform the competent authorities of any increase in the activity level, provide medical assistance to those affected by the accident, minimise the release of radioactive substances into the environment, and provide compensation for damage to human health, property and the environment caused by the accident.

Regarding radiation protection, the Law sets the permissible annual dose limit at 1 millisievert (mSv) for the population and at 20 mSv for workers, subject to a permitted increase of the annual effective dose under certain conditions. The Law also requires licensees to plan and implement radiation protection measures, systematically control the release of radioactive substances into the environment and at workplaces; monitor and record the personal radiation doses of workers, provide radiation protection training and certification of managers and workers at facilities; submit workers to regular medical examinations and provide them with regular information on ionising radiation parameters and their personal radiation doses. Managers and workers must have the

appropriate qualifications and workers must receive advanced training in the field of nuclear and radiation safety.

Radiation protection is also provided for in the manufacture of food products, the use of drinking water and use of X-rays for the purposes of medical diagnosis and therapy. The Law sets out the conditions pursuant to which workers participating in the cleanup of a nuclear accident may be exposed to increased doses.

The Law further provides for the establishment of a state system of physical protection co-ordinated by the Ministry of the Environment and Natural Resources. Such a system aims to prevent illicit acquisition, possession, use, transfer, modification, destruction or dispersion of nuclear material, radioactive substances and other ionising radiation sources which could result in personal injury, damage to property or contamination of the environment. Nuclear material, radioactive substances and other ionising radiation sources are classified into three categories for the purpose of applying different levels of physical protection measures to them.

Regarding radioactive waste management, the Law provides that the operator of a radioactive waste processing facility has the right to receive, collect, transport, account for, pre-treat, process and dispose of radioactive waste. The collection, interim storage, preparation and transfer of radioactive waste, as well as its accounting are undertaken by the waste generator, which bears the cost of its transportation from its facility to the processing plant. The import, transit, export and re-export of any type of radioactive waste into or out of the country is prohibited. The State is the only authorised owner of radioactive waste which is to be stored in a geological repository. The Law sets out the procedure to be followed when selecting a site for such a repository.

Lastly, the Law grants rights to, and imposes obligations on, citizens and public organisations, particularly with regard to rights to information.

Law on Export Control of Armaments, Military Equipment and Dual-Use Products

The Law on Export Control of Armaments, Military Equipment and Dual-Use Products was adopted on 28 April 1998 and entered into force on 1 September 1998. This Law expressly states that one of the main principles governing export regulation in Georgia is compliance with international obligations regarding the non-proliferation of weapons of mass destruction. The following categories of items are subject to export control: conventional arms and military technology, and services connected with their production; nuclear materials, technology, equipment and facilities; special non-nuclear materials and products; dual-use equipment and technologies; radiation sources and isotope products; nuclear, chemical, biological and dual-use technologies which could be used in the creation of weapons of mass destruction or missile weapons in accordance with lists of items established by international non-proliferation regimes.

The Law lays down the principles which govern the export control system in Georgia, including the priority of political interests, verification of the end use of products and accessibility of information on export control legislation. It establishes the duties and powers of the competent government bodies in the field of export control. The Law also outlines the procedure to obtain an export licence, and provides that nuclear materials can only be exported if the importing country offers special guarantees. Provision is made for the adoption of further legislative acts to implement this Law.

Other Relevant Legislation

On 8 February 1995, the Parliament adopted Law No. 504 Prohibiting the Transit and Import of Toxic and Radioactive Waste.

The Law on Protection of the Environment was adopted on 10 December 1996.

Finally, pursuant to Article 6 of the Constitution of Georgia, international treaties or agreements concluded with and by Georgia, if they do not contradict the Constitution of Georgia, take precedence over domestic legislation.

Draft Legislation and Regulations

The Law on Nuclear and Radiation Safety provides for the adoption of the following legislative instruments:

- a Law on the Transport of Radioactive Substances to regulate the sealing of the material to be transported, the prevention of damage to packaging by any external factors, labelling, testing of types of package, and other aspects associated with the transport of goods;
- a Law on Radioactive Waste and Radioactive Waste Storage;
- a Decree on the Licensing of Nuclear and Radiation-related Activities;
- a Decree on the State Inventory of Radioactive Substances and Waste;
- a Decree on the Register of Radioactive Waste;
- a Decree on Radiation Safety Standards.

International Conventions

Civil Liability for Nuclear Damage

Georgia is not a Party to any of the international conventions governing civil liability for nuclear damage.

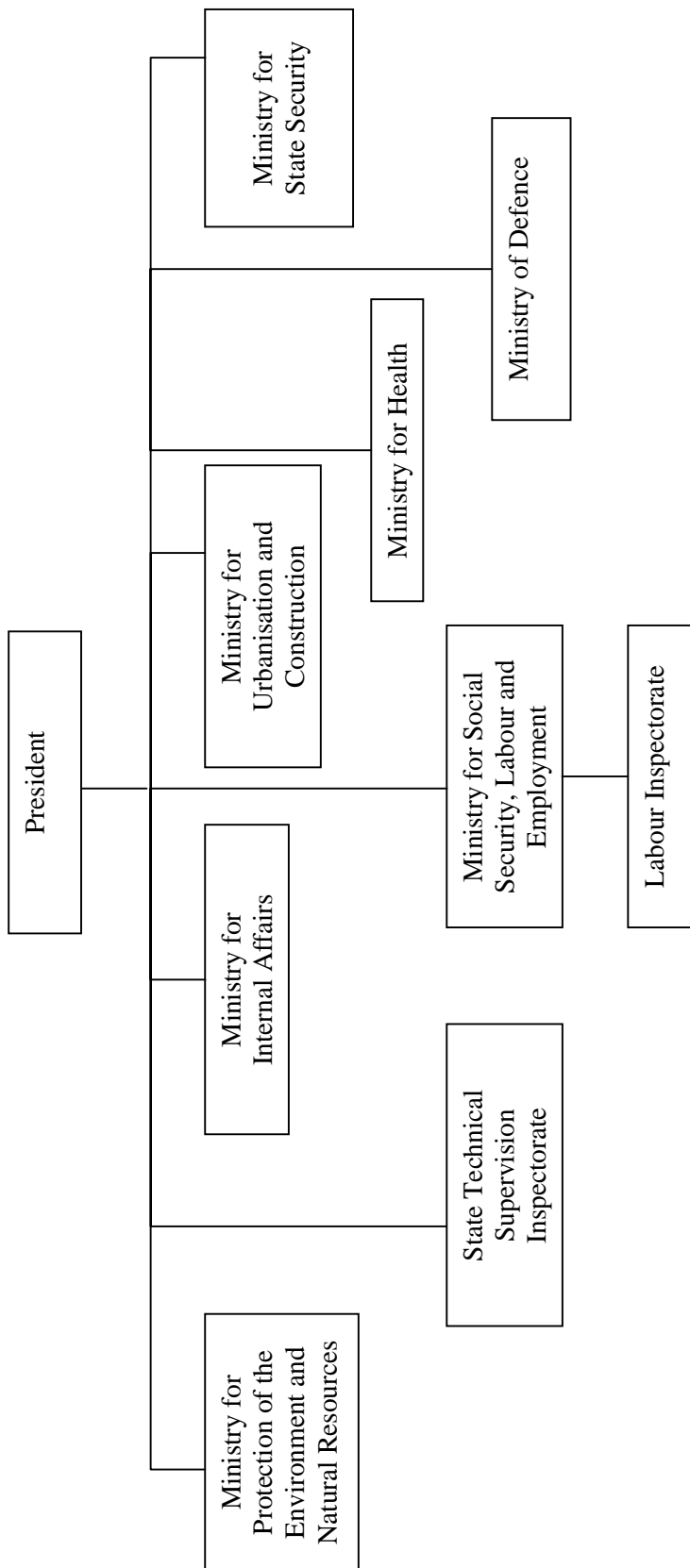
Other International Conventions

- Georgia acceded to the 1968 Treaty on the Non-Proliferation of Nuclear Weapons on 7 March 1994.
- Georgia ratified the 1996 Comprehensive Nuclear Test Ban Treaty on 27 September 2002.
- Georgia ratified the 1996 Protocol to the 1972 Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter on 18 April 2000.

Membership in Nuclear Organisations

Georgia is a member of the International Atomic Energy Agency (IAEA).

GEORGIA
Competent Nuclear Authorities



HUNGARY

Introduction

At present, there is one nuclear power station in Hungary. It is located at Paks on the Danube and has four units (VVER-440 reactors) with a total capacity of 1 840 MWe. It generated approximately 39% of the electricity in Hungary in 2002.

Spent fuel of the Paks NPP is kept in an interim spent fuel storage facility. The Interim Spent Fuel Storage Facility assures the storage of the spent fuel for fifty years, thus the decision whether to reprocess the spent fuel or directly dispose of it, is postponed. The long-term strategy of HLW management is now in preparation and the exploration of the Boda Claystone Formation continues.

The *Püspökszilagy* waste management and disposal centre is the only facility in Hungary that provides final disposal for low and intermediate level waste produced by industry, medicine and research facilities. The repository was opened by the Hungarian Atomic Energy Commission (HAEC) in 1976 and is now operated by the Public Agency for Radioactive Waste Management. With storage space in its spent fuel pools running low, the Paks plant awarded a contract for the construction of a dry storage system. The HAEC issued a licence in February 1997 for the commissioning of this facility. In 1993, a national project was launched to select a site for the disposal of low and intermediate level waste from the nuclear power plant. It identified a potentially suitable site at Bataapáti (Üveghuta). In 2001 a long-term research project was undertaken for the site characterisation and confirmation. Based on a geological exploration plan, approved by the competent authority, on-site investigations have taken place. Preparations have started for the elaboration of an environmental impact study and an integrated safety assessment. On this basis the project would end in 2004 with the first steps of the licensing procedure.

The Hungarian Power Companies Ltd. (*Magyar Villamos Művek Reszvenytárság – MVM Rt.*) is the Hungarian national utility, and is owner of the Paks nuclear power plant.

Competent Nuclear Authorities

Under the 1996 Act on Atomic Energy, the authority to implement state responsibilities in the field of the safe use of nuclear energy was vested in the Hungarian Atomic Energy Commission (*Országos Atomenergia Bizottság*) (HAEC) and the Hungarian Atomic Energy Authority (*Országos Atomenergia Hivatal*) (HAEA), as well as in the ministers concerned. The recent amendments to the Act on Atomic Energy have transferred HAEC duties partly to HAEA and partly to a new body, the Atomic Energy Co-ordination Council (*Atomenergia Koordinációs Tanács – AECC*). The AECC co-ordinates the activities relating to the safe application of atomic energy, nuclear safety and radiation protection which belong to the competence of the ministries concerned, the HAEA, and other administrative bodies; monitors the enforcement of the legal provisions relating to the application of atomic energy and the exercise of regulatory authorities; and discusses matters of national and

international importance relating to the regulatory system serving the safe application of atomic energy, to nuclear safety and radiation protection. The AECC is chaired by the Director General of HAEA and its members are appointed by officers of several ministries. The Director General of the HAEA presents an annual report to the National Assembly on the safety of the use of nuclear energy.

The HAEA plays a central role in the regulation of the use of atomic energy in Hungary. Under the Act, it regulates certain activities, such as the licensing of nuclear facilities and co-ordinates the regulation of other activities through ministries and administrative bodies as specified under the Act and regulations. Radiation safety, however, is under the responsibility of the Minister of Health, Social and Family Affairs in keeping with the traditional system of separation of responsibilities in the field.

The principal responsibility of the HAEA is to fulfil regulatory duties in connection with the peaceful uses of atomic energy, with special emphasis on the safety of nuclear materials and facilities, and to co-ordinate and provide information related to such matters. The HAEA is entitled to conduct inspections at the installation of any user of atomic energy and is responsible for the management of the Central Nuclear Financial Fund. It is also empowered to fine any licensee for violation of legal regulations or safety rules, or for any failure to comply with the provisions laid down in the licence. The Prime Minister appoints the Director-General and the Deputies of the HAEA. The Government exercises supervision over the HAEA through the Minister of the Interior. The HAEA contains two directorates: the Nuclear Safety Directorate and the General Nuclear Directorate.

The responsibilities of the HAEA and the Atomic Energy Co-ordination Council have been specified in Government Decree No. 114/2003 (see *infra* under Other Relevant Legislation).

To ensure proper scientific support for the HAEA, a scientific council, consisting of up to 12 qualified experts, gives advice on the most recent technical developments related to nuclear safety, radiation protection and nuclear emergency preparedness.

The Nuclear Safety Directorate of the HAEA is the nuclear safety regulatory body, which makes decisions on licensing, inspection and enforcement matters. The Director-General of the HAEA is the final decision maker in the event of an appeal against a resolution of this Directorate in accordance with Government Decree No. 108/1997 on the Procedures of the HAEA in Nuclear Safety Regulatory Matters, which defines the responsibilities of the Directorate. A permit from the Nuclear Safety Directorate is required for siting, construction and enlargement, commissioning, operation, modification, permanent shutdown and decommissioning of nuclear facilities. Apart from issuing standard and regulatory permits, the Directorate is also responsible for technical radiation protection of nuclear equipment and is entitled to conduct quality assurance inspections at licensees' and suppliers' premises.

The Nuclear Safety Directorate is composed of several departments, each one being responsible for a specific domain; for example, the Department for Technical Support established in 1995 is designed to improve assessment work by the use of detailed technical analysis.

The General Nuclear Directorate of the HAEA, through its Department of Nuclear and Radioactive Materials, runs both the State System of accountancy and control of nuclear materials as well as the Central Registry of radioactive materials, which keeps track of these materials on an ongoing basis, from their production to their disposal as radioactive waste. In addition to this Department, the General Nuclear Directorate comprises a Department of External Relations responsible for international organisations and international co-operation, and two divisions responsible for research and development and governmental relations, respectively.

The HAEA operates an Emergency Preparedness Organisation. It is responsible for evaluating accidents and providing recommendations for protective actions.

The following Ministers have particular responsibilities in the nuclear energy field under the Atomic Energy Act.

The Minister of Health, Social and Family Affairs is responsible for the licensing and control of ownership, use, production, storage and distribution of radioactive materials, and the use of equipment generating ionising radiation. Of particular importance is the Minister's power to license and monitor radioactive waste disposal facilities and to supervise the radiation protection service and matters related to radiation hygiene.

The Minister of the Interior, through the offices of the National Police Force and the Directorate General for National Emergency Management (including the Fire Protection and Civil Defence Service), is responsible for elements associated with public order and national security, fire protection, physical protection, security, civil defence and nuclear emergency management.

The Minister of Agriculture and Regional Development, through the offices of the Animal Health and Food Control Stations, is responsible for uses of atomic energy relating to food, plant and animal hygiene, as well as soil protection.

The Minister of Economy and Transportation, through the Hungarian Geological Survey, deals with licences relating to geology and is generally responsible for the inspection of radioactivity of raw materials used or imported for the production of building materials. He is responsible for matters related to traffic and transport.

The Minister of Environment and Water Management is competent in the fields of environmental protection, nature conservation and water quality protection, and matters associated with water utilisation and mitigation of water pollution.

The Minister of Defence is responsible for the control of handling radioactive materials in defence matters and for the construction, operation and closing down of military facilities and equipment which fall within the scope of the Act. The Minister is also responsible for special training of the armed forces and personnel for nuclear emergency preparedness.

The Minister of Education is responsible for integrating into the National Master Curriculum the requirement to provide education on the scientific, technical and radiation protection aspects of the application of atomic energy. The Minister also regulates higher and postgraduate education in the field of atomic energy in co-operation with the relevant professional institutions and ministers.

The Governmental Co-ordination Committee is responsible for emergency management. The Committee is headed by the Minister for the Interior and, in the event of nuclear emergency, his deputy is the Director general of the HAEA. The Committee consists of high-ranking representatives of the ministries and national organisations. Two sub-committees (the National Defence Committee and the Operational Staff) assist with decision-making in the event of a nuclear emergency.

The Atomic Energy Act requires that the safe application of atomic energy be promoted by the co-ordination of research activities. The HAEA has the task of evaluating and co-ordinating these activities. The Nuclear Safety Directorate of the HAEA maintains close contact with organisations that provide technical support, such as the Atomic Energy Research Institute and the Institute for Electric Power Research Co. In the field of radiation safety, the activities of the State Public Health and

Medical Officers Service is supported by the F.-J. Curie National Research Institute for Radiobiology and Radiohygiene.

Pursuant to Government Decree No. 2414/1997, the Director-General of the HAEA established the Public Agency for Radioactive Waste Management (PURAM), which is responsible for the collection, treatment, transport, storage and disposal of radioactive waste. PURAM's responsibilities cover both small-scale producers in the fields of medicine, industry and research, and waste originating from Paks NPP.

Legislation in Force

Atomic Energy Act

On 10 December 1996, the Hungarian Parliament adopted the Atomic Energy Act No. CXVI,¹ which replaced the Atomic Energy Act of 1980. The 1996 Act, while preserving the essential elements of the 1980 Act, aims to conform to more recent international rules and recommendations as issued by the IAEA and the OECD Nuclear Energy Agency.

The legal regime applicable to nuclear activities in Hungary is established in the Atomic Energy Act. This legislation entered into force on 1 June 1997, with the exception of Sections 62-64 (concerning the Central Nuclear Financial Fund) which entered into force on 1 January 1998.

The Atomic Energy Act applies to the peaceful uses of atomic energy and its associated rights and obligations, including the protection of humans and the living and non-living environment against the harmful effects of ionising radiation of natural and artificial origin. It does not apply to activities related to radioactive materials, neither does it apply to equipment which, due to the character and extent of the ionising radiation released, do not qualify as hazardous to human health or to the environment.

As regards nuclear third party liability, Hungary was the first Eastern European State to accede to the Vienna Convention on Civil Liability for Nuclear Damage and the Joint Protocol on the Application of the Vienna Convention and the Paris Convention. The Atomic Energy Act implements these international obligations at a domestic level. Thus, there is strict liability, channelled to the licensee (operator) of the nuclear facility, for all nuclear damage, except as provided for by the Act. In the case of international carriage, the contract for shipment is required to state the moment when liability is transferred between operators. The liability of the licensee is limited to 100 million Special Drawing Rights (SDR) for each nuclear accident arising at a facility, and SDR 5 million for nuclear accidents arising during the transport or storage of nuclear fuel. Nuclear damage in excess of this will be compensated by the State, provided the total amount does not exceed SDR 300 million. Payment of compensation will be effected in Hungarian currency, based on the official exchange rate with the SDR.

The licensee is obliged to provide for insurance or other financial security up to the liability ceiling specified in the Atomic Energy Act. This ceiling does not include interest and legal costs associated with the nuclear damage. If the amount available for compensation is insufficient to satisfy

1. The English translation of the complete text of this Act was reproduced in the Supplement to *Nuclear Law Bulletin* No. 60 (December 1997) and is available on the NEA Web site at: www.nea.fr/html/law/nlb/60-hungary.pdf.

the sums to which the injured parties are entitled, then the amount due to each of them will be reduced proportionately. The Municipal Court of Budapest has exclusive jurisdiction to judge compensation claims under the Act.

As regards insurance of nuclear liability, the 11 Hungarian insurers representing the vast majority of the Hungarian insurance market's non-life capacity established at the end of 1996 a Nuclear Insurance Pool, the so-called "Hungarian Atomic Pool". The Pool is based on the fundamental principles common to all nuclear pools and organised and managed by the Hungarian Insurance Co., the largest in its field. The Pool provides third party liability cover for the Paks NPP in accordance with the Atomic Energy Act. Property and transport insurance are also provided by the Pool.

As required by the Act on Atomic Energy, a Central Nuclear Financial Fund has been established (since 1 January 1998) to finance radioactive waste management. The Fund is managed by the HAEA as a separate state fund (pursuant to Act No. XXXVIII of 1992 on Public Finance) exclusively destined to finance the construction and operation of facilities for the final disposal of radioactive waste, the interim storage and final disposal of spent fuel, and the decommissioning of nuclear facilities. Payments into the Fund by licensees of nuclear facilities is determined in such a way that the Fund fully covers all the costs arising from waste management, both from the operation of the facility and its decommissioning. In the case of a nuclear power plant, payments made by the licensees to the Fund are taken into account when pricing electricity.

Act on the Control and Organisation of Protection against Catastrophes

Act No. LXXIV of 1999 on the Control and Organisation of Protection against Catastrophes entered into force on 1 January 2000. It establishes a single leading body (the Governmental Co-ordination Committee) to deal with all types of catastrophes.

Pursuant to the Act, the user of nuclear energy is obliged to report all abnormal events, or any accident resulting in personal injury, to the mayor with jurisdiction over the area, the county or Budapest office of the State Public Health and Medical Officer's Service with jurisdiction over the area, the police and the HAEA.

The Act lays down the obligations of the State Public Health and Medical Officer's Service in the event of an emergency, to prevent the proliferation of radioactive contamination and to avoid radiation injury.

Other Relevant Legislation

Forty-five regulations have been adopted to give effect to the requirements of the Act on Atomic Energy. The following regulations in particular were issued:

Decree on the Scope of Duties, Authority and Jurisdiction of Imposing Penalty of the HAEA, and on the Activities of the Atomic Energy Co-operation Council

Government Decree No. 114/2003 was adopted on 29 July 2003 and entered into force on 1 August 2003. It implements the provisions of the 1996 Atomic Energy Act defining the statutes of the Hungarian Atomic Energy Authority (HAEA), and the Atomic Energy Co-ordination Council and provides HAEA with regulatory independence.

Decree on the Procedures of the HAEA in Nuclear Safety Regulatory Matters

Government Decree No. 108/1997, which entered into force on 25 June 1997, defines the responsibilities of the HAEA Nuclear Safety Directorate and describes the procedure which applies to the safety analysis report. As regards the licensing procedure, the Decree provides that Parliament's consent is required for the establishment of a new NPP or new units within an existing plant, as well as to acquire ownership of an operating NPP or any transfer of the right of operation. The Preliminary Safety Analysis Report serves as the basis of the application for a construction licence and the Final Safety Analysis Report is necessary for an operating licence. The Decree provides that the Final Safety Analysis Report shall be updated annually, so that it can serve as an authentic and continuous basis for the assessment of the safety of the installation throughout its entire lifetime. The HAEA performs a nuclear safety assessment within ten years of the first day of validity of the first operating licence issued and repeats this assessment one year before the deadline set for the Authority's assessment. The Periodic Safety Report containing the results of this assessment must be submitted to the Authority. In the Periodic Safety Report, the licensee presents the factors determining the operating risk of the installation compared to that contained in the Final Safety Analysis Report, to serve as a basis for the operating licence. If necessary, the licensee carries out safety improvements to eliminate or moderate risk factors. The licensee also proposes a programme of safety improvement measures that are subject to fixed deadlines, and submits this to the Authority as part of the report. The Authority issues a resolution, based on its own safety assessment and the Periodic Safety Report of the Licensee, in which it lays down the conditions for future operation.

Decree Laying Down Basic Standards on Radiation Protection

Decree No. 16/2000 adopted by the Minister of Public Health establishes the legal framework governing radiation protection based upon the 1990 Recommendations of the International Commission on Radiological Protection and the Basic Safety Standards of the International Atomic Energy Agency. It establishes health requirements and radiation protection standards applicable to all activities involving the use of atomic energy, in order to protect workers and the general public against the harmful effects of ionising radiation. A radiation protection service must be established at all installations using nuclear energy. Operators of such installations are also required to prepare internal radiation protection standards to be approved by the State Public Health and Medical Officer's Service. The Decree sets dose limits for workers and the public. Finally the Decree identifies the radiation safety principles which apply in the workplace and sets out provisions on radiation protection training, dosimetric control, the treatments of persons suffering from a radiation injury, accident handling and the special radiation protection requirements for nuclear power plants.

Order on the Operational Radiation Protection of Outside Workers

Order No. 30/2001 was adopted by the Minister of Health on 3 October 2001. It aims to implement the principles established in Council Directive 90/641/Euratom of 4 December 1990 on the Operational Protection of Outside Workers Exposed to the Risk of Ionising Radiation during their Activities in Controlled Areas. The Order implements in particular the principles of justification, optimisation and dose limitation and contains provisions governing dosimetric monitoring, inspection by the authority and the respective obligations of outside workers and of the licensee of controlled areas.

Order on the Protection of the Health of Persons Exposed to Ionising Radiation for Medical Purposes

Order No. 31/2001 was adopted by the Minister of Health on 3 October 2001. It establishes conditions governing the application of medical radiological procedures, including the optimisation of medical exposures and reduction of potential exposure, duties of medical personnel in connection with the application of such procedures, the employment of medical physicists, control of radiological equipment, training of personnel and inspection by the competent authority.

This Order aims to implement Council Directive 97/43/Euratom of 30 June 1997 on Health Protection of Individuals against the Dangers of Ionising Radiation in relation to Medical Exposure. These requirements apply to persons exposed to ionising radiation for the purposes of medical treatment, who have to take a medical examination or an aptitude test in connection with a job or a medical screening test, forensic medical examination or for medical scientific research purposes.

Decree on the Licensing of Shipments of Radioactive Waste across the National Border

Decree No. 32/2002 of 1 March 2002 regulates the licensing of shipments of radioactive waste to, from or in transit through Hungary and entrusts the HAEA with the task of applying these rules. The Decree aims to implement Council Directive 92/3/Euratom of 3 February 1992 on the Supervision and Control of Shipments of Radioactive Waste between the Member States, into and out of the Community.

Decree on Environmental Impact Assessment

Decree No. 20/2001 of 14 February 2001 regulates in detail the rules of environmental impact assessment. It aims to implement Council Directive 85/337/EEC of 27 June 1985 and Council Directive 97/77/EC of 3 March 1997 on the Assessment of the Effects of Certain Public and Private Projects on the Environment. The Decree establishes a detailed list of projects having significant effects on the environment and further specifies the factors to be taken into account for an environmental impact assessment.

Order on Radioactive Releases into the Air and Water in Connection with the Use of Atomic Energy

Order No. 15/2001 was adopted on 6 June 2001 by the Minister of Environmental Protection. The Order sets out the release limits, planned release levels, planning requirements and operational requirements concerning radioactive releases and monitoring of the environment.

Order on some Aspects of the Interim Storage and Final Disposal of Radioactive Waste and on the Radiological Aspects of Radioactive Materials Arising from Industrial Activities and Naturally Occurring Radioactive Materials

Order No. 47/2003 was adopted on 8 August 2003 by the Minister of Health, Social and Family Affairs. It sets out the procedure and conditions to obtain a licence to establish an interim storage facility and final depository of radioactive waste. It also regulates the conditions of processing radioactive materials arising from industrial activities and naturally occurring radioactive materials.

The following regulations have also been adopted to implement the Act on Atomic Energy:

- Government Decree No. 121/1997 requires the prior approval of the HAEA in the general licensing procedure for internationally controlled goods and technologies carried out by the Export Control Office of the Ministry of Economic Affairs. This is to ensure compliance with Hungary's international obligations as a Party to the Treaty on the Non-Proliferation of Nuclear Weapons.
- Government Decision No. 2414/1997 authorises the Director-General of the HAEA to establish the Public Agency for Radioactive Waste Management (PURAM). The tasks associated with the interim storage and final disposal of radioactive waste and spent fuel are performed by PURAM through selected contractors under the supervision of the HAEA.
- Ordinance No. 25/1997 of the Minister of Industry, Trade and Tourism provides that the HAEA is made responsible for the Central Registry of radioactive material. Similarly, under Ordinance No. 39/1997 of that Minister, the HAEA is responsible for the State System of Accountancy and Control of nuclear material.
- Ordinance No. 13/1997 of 3 September 1997 of the Minister of Transportation, Communication and Water Management contains the rules for the safe transport by rail of spent nuclear fuel, and Ordinance No. 14/1997 of the same date and of the same Minister specifies the conditions applicable to all modes of transport of radioactive substances.
- Ordinance No. 47/1997 of 26 August 1997 of the Minister of Internal Affairs sets out the tasks of the Police Force in connection with the application of atomic energy.

International Conventions

Nuclear Third Party Liability

- Hungary acceded to the 1963 Vienna Convention on Civil Liability for Nuclear Damage on 28 July 1989 and it entered into force in this country on 28 October 1989. Hungary also signed the Protocol to Amend the Vienna Convention on 29 September 1997.
- Hungary acceded to the 1988 Joint Protocol relating to the Application of the Vienna Convention and the Paris Convention on 26 March 1990 and it entered into force in this country on 27 April 1992.

Other International Conventions

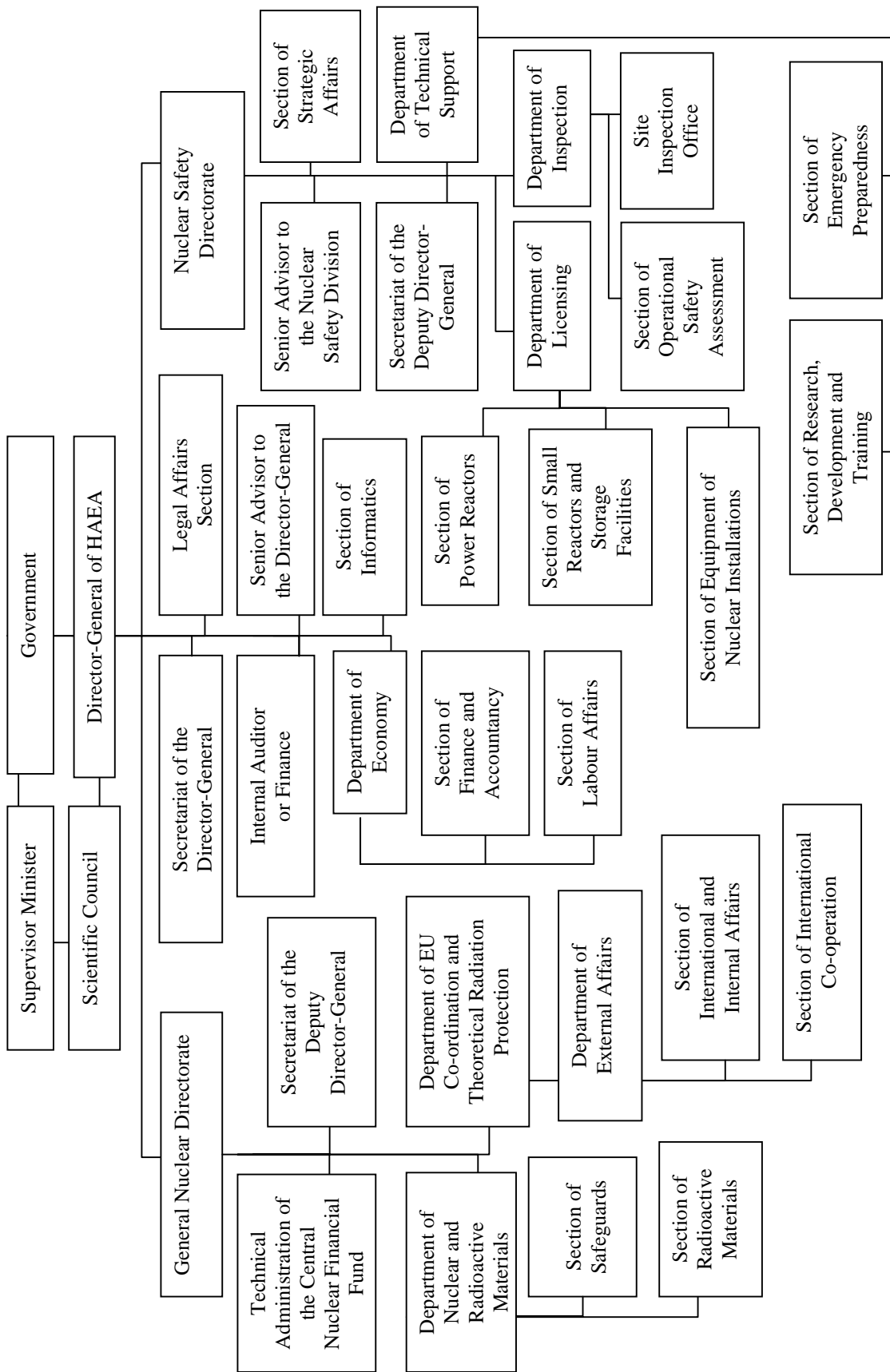
- Hungary ratified the 1960 Convention concerning the Protection of Workers against Ionising Radiation on 8 June 1969 and it entered into force in this country on the same date.

- Hungary ratified the 1963 Treaty Banning Nuclear Weapons Tests in the Atmosphere, in Outer Space and under Water on 21 October 1963 and it entered into force in this country on the same date.
- Hungary ratified the 1968 Treaty on the Non-Proliferation of Nuclear Weapons on 27 May 1969 and it entered into force in this country on 5 March 1970.
- Hungary ratified the 1971 Treaty on the Prohibition of the Emplacement of Nuclear Weapons and other Weapons of Mass Destruction on the Sea-Bed and the Ocean Floor and in the Subsoil thereof on 13 August 1971 and it entered into force in this country on 18 May 1972.
- Hungary ratified the 1972 Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter on 5 February 1976 and it entered into force in this country on 6 March 1976.
- Hungary ratified the 1979 Convention on the Physical Protection of Nuclear Material on 4 May 1984 and it entered into force in this country on 8 February 1987.
- Hungary ratified the 1986 Convention on Early Notification of a Nuclear Accident on 10 March 1987 and it entered into force in this country on 10 April 1987.
- Hungary ratified the 1986 Convention on Assistance in Case of a Nuclear Accident or Radiological Emergency on 10 March 1987 and it entered into force in this country on 10 April 1987.
- Hungary ratified the 1994 Convention on Nuclear Safety on 18 March 1996 and it entered into force in this country on 24 October 1996.
- Hungary ratified the 1996 Comprehensive Nuclear Test Ban Treaty on 13 July 1999.
- Hungary ratified the 1997 Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management on 2 June 1998 and it entered into force in this country on 18 June 2001.

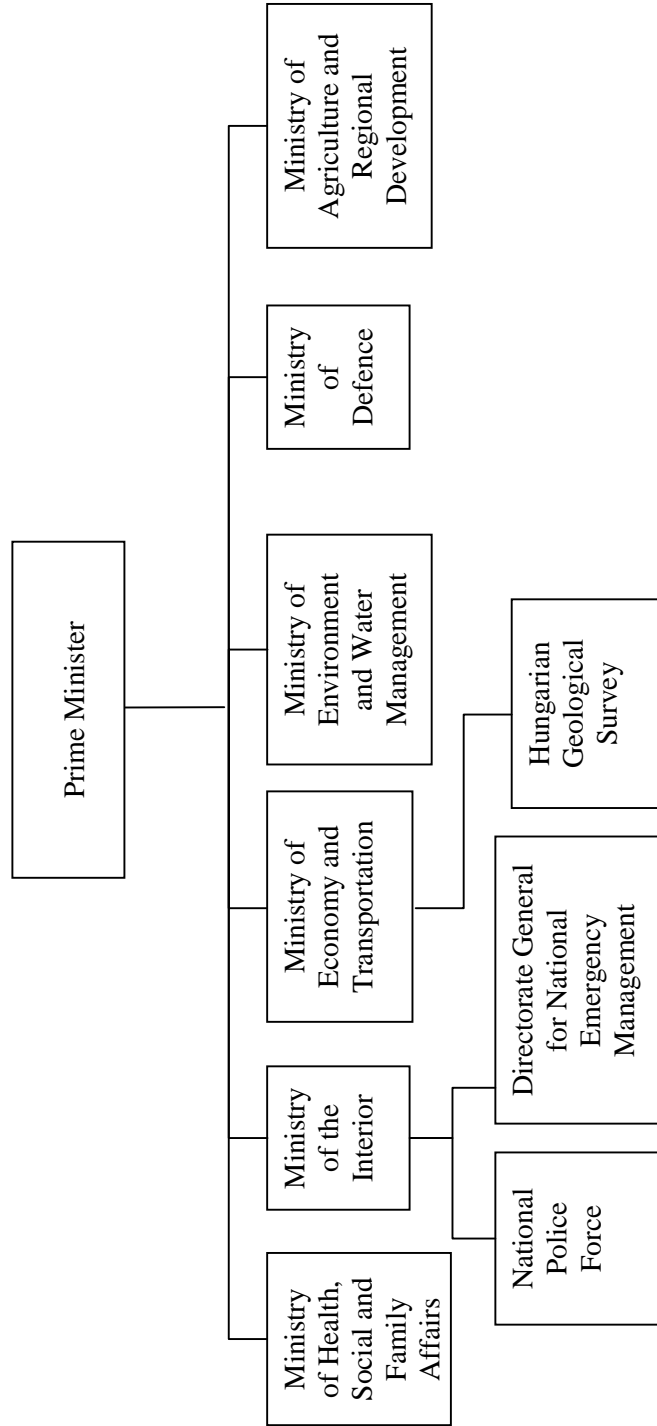
Membership in Nuclear Organisations

Hungary is a member of the International Atomic Energy Agency (IAEA). It joined the OECD Nuclear Energy Agency in 1996. The Paks Nuclear Power Plant Ltd. is a member of the World Association of Nuclear Operators (WANO). Hungary is a member of the Nuclear Suppliers Group and the Zangger Committee.

HUNGARY
Organisational Structure of HAEA



HUNGARY
Governmental Authorities Competent in the Nuclear Energy Field



KAZAKHSTAN

Introduction

Kazakhstan has a uranium ore extraction and ore milling industry, including facilities operated by the Nuclear Power and Industrial Complex of Kazakhstan (*Kazatomprom*), Ulba metallurgical factory, and a facility for the production of fuel pellets in Ust-Kamenogorsk.

A fast breeder reactor, 135 MWe BN-350, at Aktau was used as a water desalination plant and for the production of electricity, for over 25 years. Its operations have now ceased and the decommissioning procedure of the reactor has started pursuant to Governmental Decree No. 456 of 22 April 1990.

In addition, Kazakhstan operates three research reactors (two in Kurchatov and one in Almaty) for nuclear safety tests. Research is also conducted at the site of the nuclear research centre at Semipalatinsk, previously a Soviet Union site for nuclear tests. One of this country's main concerns is the decontamination and rehabilitation of sites polluted by previous military and civilian nuclear activities.

The Government adopted a resolution in October 1995 to further develop nuclear energy in Kazakhstan and to build a nuclear power plant. A plan to develop nuclear power and the uranium industry was adopted by the Government in 2002.

Competent Nuclear Authorities

The Kazakhstan Atomic Energy Committee (KAEC) shares responsibility with several ministries for activities in the field of nuclear energy. The KAEC, formerly called the Kazakhstan Atomic Energy Agency (KAEA), was set up by Presidential Decree in 1992 as a separate legal entity with responsibility for implementing national policy and regulating all activities in the nuclear field. Between 1996 and 1999, it was established as a separate department under the authority of the Ministry of Science. Since October 1999, when its change in name became effective, it operates as a separate legal entity under the aegis of the Ministry of Energy, Trade and Industry (since January 2001 the Ministry of Energy and Mineral Resources).

The Government has empowered the KAEC to carry out the following tasks:

- license activities involving the use of atomic energy and ensure compliance with licence conditions;
- establish rules and guidelines, such as approving the list of documents necessary for engaging in an activity involving the use of atomic energy;

- analyse documentation relating to the safety of nuclear installations;
- determine the qualifications necessary for personnel involved in the use of atomic energy and ensure their compliance;
- carry out the accounting, control and physical protection of nuclear materials during their storage, transport and use, and tasks related to the regime for the non-proliferation of nuclear weapons, in conjunction with the IAEA and other international organisations involved in the peaceful use of nuclear energy;
- control the export and import of nuclear materials and technology;
- ensure that emergency preparedness procedures are established and followed in the case of nuclear accidents and that notification is given to international organisations and supervisory bodies in other countries in the case of a nuclear accident;
- carry out scientific research relevant to its regulatory and supervisory activities and participate in activities involving international co-operation in this area;
- prepare legislative proposals on the safe use of atomic energy and the non-proliferation of nuclear weapons;
- inspect nuclear installations and impose penalties for violations of operating licence conditions;
- ensure the safe management of nuclear materials and radioactive waste (including their collection, reprocessing, transport and storage); and
- determine the conditions for implementing quality assurance programmes and ensuring their application during the construction and operation of installations.

The Ministry of Energy and Mineral Resources is also responsible for the protection of the environment against radioactive contamination. It co-ordinates the network which monitors the level of radiation in Kazakhstan and carries out environmental impact assessments of various projects. The National Nuclear Centre and *Kazatomprom* are under its authority.

The National Nuclear Centre (NNC) was established by Presidential Decree No. 779 on 15 May 1992 to conduct research on the peaceful use of nuclear energy and radiation safety. It is also responsible for evaluating the consequences of nuclear tests at the now-closed Semipalatinsk Test Site. The NNC is divided into six entities: the Institute of Nuclear Physics, the Institute of Atomic Energy, the Institute of Geophysical Research, the Institute of Radiation Safety and Ecology, the Baikal Enterprise and the Kazakh State Research and Production Centre of Explosive Operations.

The Nuclear Power and Industrial Complex of Kazakhstan (*Kazatomprom*) was established by Governmental Decree on 14 July 1997. It is responsible for managing the Government's stake in companies and state enterprises involved in uranium mining and milling and the production of nuclear fuel for nuclear power plants. *Kazatomprom* is also the national company for exporting and importing uranium, nuclear fuel and dual-use materials.

The Ministry of Health provides medical services necessary for the protection of the public and employees at risk against the harmful effects of ionising radiations. It is responsible for regulating and

inspecting health protection measures during the manufacture, use, storage, disposal and transport of nuclear materials and radioactive sources and has the authority to prohibit unauthorised use thereof.

The Ministry of Education and Science is responsible for the co-ordination of all scientific activities in the field of nuclear energy. It also verifies the scientific soundness of technical projects.

The Ministry of Internal Affairs verifies the fire safety and physical protection standards of all facilities which use nuclear energy or in which radioactive waste is managed, and ensures compliance with the rules governing the transportation of nuclear materials and radioactive substances.

The control of radiation doses and levels of radionuclides in soil, water, food and other products is carried out by laboratories attached to the Ministry of Energy and Mineral Resources, the Ministry of Agriculture, and other research institutes.

The Ministry of Industry and Trade is responsible for export and import control. A licence from the KAEC is required for the export and import of nuclear materials, ionising radiation sources and dual-use products.

Finally, the Agency on Emergency Situations is responsible for monitoring compliance with measures on the prevention of emergency situations and sets out measures to protect the public against radiation exposure in the event of such situations. The Department of Safety of Industry and Mines, within this Agency on Emergency Situations, is responsible for regulating the use of industrial equipment.

Legislation in Force

Law on the Peaceful Use of Atomic Energy

On 14 April 1997, the Law on the Peaceful Use of Atomic Energy (Atomic Energy Law) was adopted and entered into force. This framework Act defines nuclear energy concepts, sets out the legal framework governing the peaceful uses of nuclear energy, the protection of public health and the environment, the non-proliferation of nuclear weapons and nuclear and radiation safety.

The Law authorises the Government to designate those state bodies which are to implement and ensure compliance with the national regulation of nuclear and radiation safety and the licensing of various types of nuclear activities. These bodies are responsible for:

- initiating legislative proposals on the development or amendment of nuclear legislation;
- developing and enforcing rules made pursuant to the Atomic Energy Law;
- issuing licences for nuclear activities and monitoring compliance with licence conditions;
- conducting inspections and exercising radiation protection control;
- accounting and control of nuclear materials and ionising radiation sources;
- obtaining nuclear energy related information from all businesses, organisations or persons involved in nuclear activities;

- informing the competent authorities of violations of nuclear legislation; and
- co-operating with foreign regulatory and supervisory bodies and international organisations on issues of nuclear safety, non-proliferation of nuclear weapons and physical protection of nuclear materials.

The activities covered by the Atomic Energy Act include the siting, design, construction, commissioning, operation and decommissioning of nuclear installations, safety upgrades, uranium mining and processing, use of radioactive substances and ionising radiation sources including the transport, storage and disposal of such sources, accounting and control of nuclear materials, export and import of nuclear materials, technology and equipment, and expert training. These activities are subject to licensing and radiation protection requirements destined to protect the public and the environment.

The Atomic Energy Act refers also to radioactive waste management, physical protection of nuclear materials and installations and accounting and control of ionising radiation sources. The provisions on the transportation, export and import of nuclear materials, technology and equipment are widely defined, with specific regulations to provide further guidance in these areas.

The rules on third party liability for nuclear damage are included within the Act, which provides that the operator is obliged to have sufficient financial resources to ensure compliance with safety standards and sufficient means to compensate personal injury, property damage and environmental damage. However, neither a provision on mandatory insurance nor strict and exclusive liability of the nuclear operator are included. The Act provides for a right of compensation for the risk assumed by citizens, public associations and organisations as a result of a nuclear accident, or for radiation exposures beyond accepted limits. This concept of “compensation for risk” is also mentioned in the Law on Radiation Safety of the Population. It is not compensation *per se*, but rather a premium for incurring a certain risk.

Law on Radiation Safety of the Population

The Law on Radiation Safety of the Population, adopted by the Parliament and signed by the President on 23 April 1998, reflects the main aspects of national policy regarding radiation safety of the public. This Law aims to protect the public and the environment from the harmful effects of ionising radiation, and, in particular, to protect the interests of present and future generations. It regulates radiation safety through legal, administrative, engineering, technical and health measures, implementing the principles of justification, optimisation and limitation of exposure doses. The Law sets out the rights of individuals in the field of radiation safety, the duties of users of ionising radiation sources and the responsibilities of the competent state authorities; it provides details on annual dose limits for radiation workers and for the public and contains provisions governing emergency situations, quality assurance, accountability of nuclear materials and information.

The Requirements for the Quality Assurance Programme on Radiation Safety for Certain Activities connected with the Use of Atomic Energy, which aim to comply with ISO quality assurance standards, were adopted by the KAEC on 1 December 1999. All enterprises using atomic energy under the supervision of the KAEC are required to comply with this quality assurance programme.

Law on Export Control of Armaments, Military Equipment and Dual-Use Products

This Law of 16 June 1996 is intended to regulate the export of nuclear materials of a sensitive nature. It aims to satisfy IAEA requirements with respect to nuclear non-proliferation and international security. The system set up by the Law for licensing, approval, notification and control ensures that exported nuclear-related items are not diverted to non-peaceful purposes.

Decree No. 183 on Export and Import of Nuclear Materials, Technologies, Equipment, Installations, Special Non-nuclear Materials, Equipment, Materials and Technologies of Dual Use, Sources of Radioactive and Isotope Products was adopted on 9 March 1993.

Other Relevant Legislation

Regulation on Physical Protection of Nuclear Materials and Nuclear Installations

This Regulation, adopted on 31 March 1994, establishes conditions for the physical protection of nuclear materials on the site of nuclear installations and during transport, and assigns responsibilities to different public bodies and to operators in the field of physical protection.

All government agencies with responsibilities for nuclear installations must submit plans for implementing physical protection measures, in accordance with the provisions of the Regulation. In addition, operators must submit their internal physical protection plans for approval by the KAEC.

Regulation on the Use of Atomic Energy, Radioactive Waste and Spent Nuclear Fuel Management

This Regulation No. 364 was adopted by the Government on 11 April 1994. It sets out the responsibilities of public authorities with jurisdiction in the nuclear field, as well as conditions for licensing, radiation protection, and accounting and control of nuclear materials. The Government also adopted Decree No. 100 on Licensing of Activities connected with the Use of Atomic Energy on 12 February 1998.

Regulations on the Elimination of Effects of an Accident during the Transportation of Nuclear Materials by Rail and Road

These Regulations, adopted on 12 October 1999, are based on IAEA Recommendations. They define the main principles and procedure governing interaction between the local and central executive organisations responsible for transportation of radioactive materials by rail and road. They also establish measures to mitigate the effects of accidents occurring during transportation.

Regulations on the Safe Transport of Radioactive Materials

These Regulations, adopted on 6 September 2002, are based on IAEA Recommendations. They establish safety standards governing the radiation, criticality and thermal hazards posed to persons, property and the environment from the transport of radioactive materials.

Draft Legislation and Regulations

The draft Law on Radioactive Waste Management aims to provide a legislative framework for the safe management of radioactive waste and to provide protection for the public against the harmful effects of exposure to radioactive waste. It defines radioactive waste management as all types of activities connected with the collection, processing, re-processing, transport, storage and disposal of radioactive waste. It lays down rules on licensing, safety and physical protection during radioactive waste management, including provisions on the financing thereof, and the responsibilities of the Government and local executive bodies. The management of radioactive waste is to be carried out by the state body on radioactive waste management.

International Conventions

Nuclear Third Party Liability

Kazakhstan is not a Party to any of the international conventions governing third party liability for nuclear damage.

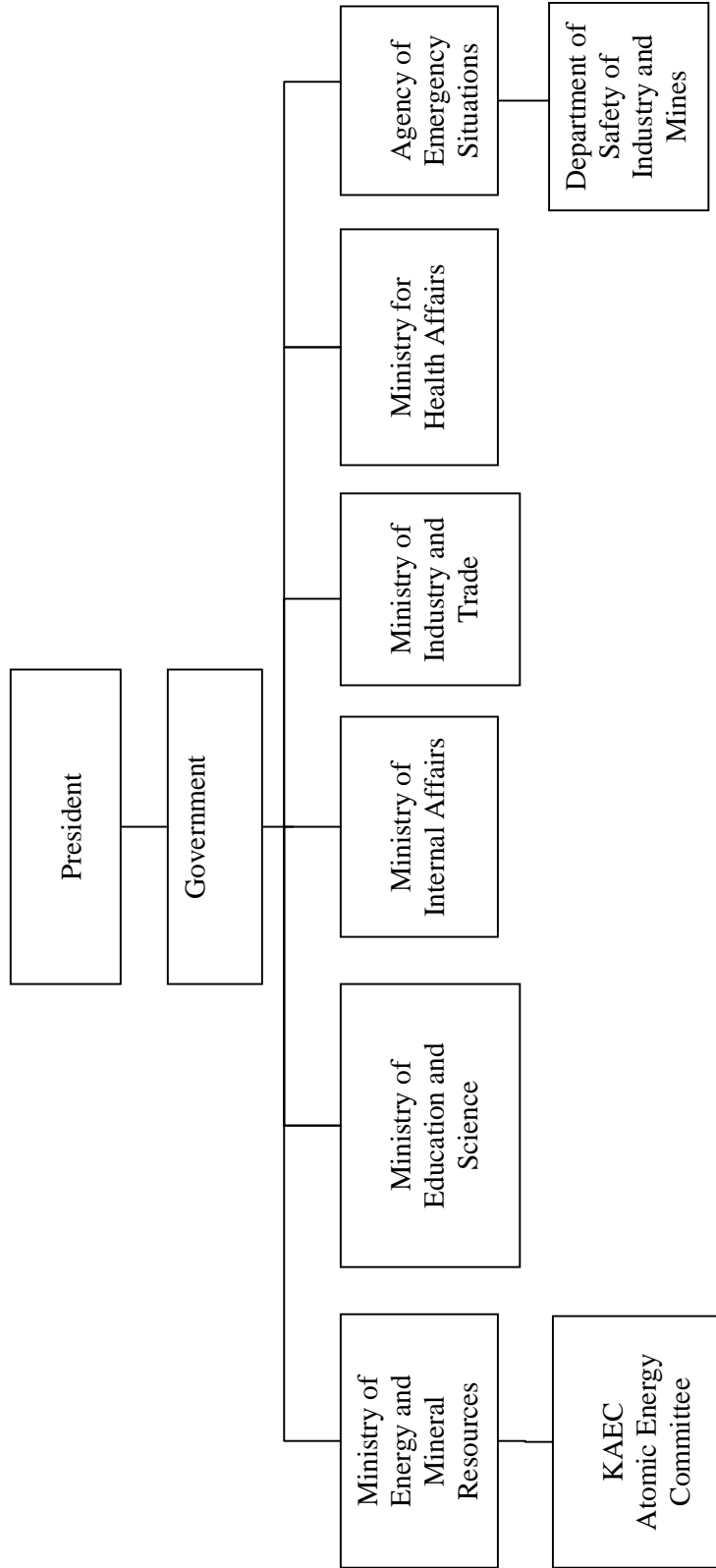
Other International Conventions

- Kazakhstan acceded to the 1968 Treaty on the Non-Proliferation of Nuclear Weapons on 14 February 1994 and it entered into force in this country on the same date.
- Kazakhstan signed the 1994 Convention on Nuclear Safety on 20 September 1996.
- Kazakhstan ratified the 1996 Comprehensive Nuclear Test Ban Treaty on 14 May 2002.
- Kazakhstan signed the 1997 Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management on 29 September 1997.

Membership in Nuclear Organisations

Kazakhstan is a member of the International Atomic Energy Agency (IAEA) and of the Nuclear Suppliers Group.

KAZAKHSTAN
Competent Nuclear Authorities



LATVIA

Introduction

There are no nuclear power plants or nuclear fuel cycle facilities in Latvia. There is, however, a 5 MWe IRT-type research reactor at Salaspils in the Riga region, which was shut down in June 1998.

Since the beginning of the 1960s, the radioactive waste produced in Latvia has been collected and transported to the centralised storage/treatment/disposal facility of Baldone, which is operated by the Radioactive Waste Management Agency (*Radioaktīvo atkritumu pārvaldības aģentūra* – RAPA), formerly the Radons enterprise.

Competent Nuclear Authorities

The Act on Radiation Safety and Nuclear Safety of 2000 set up a new independent regulatory authority under the supervision of the Ministry of Environmental Protection and Regional Development (MEPRD) which was reorganised in February 2003 into the Ministry of Environment, the Radiation Safety Centre (*Radiācijas Drošības Centrs* – RDC). It is responsible for ensuring the safe use of ionising radiation sources and protecting the public and the environment against their potential harmful effects while encouraging the maximum benefit from use of radiation sources. The RDC is responsible, *inter alia*, for supervising and controlling radiation protection and nuclear safety on behalf of the State, issuing licences for activities involving ionising radiation sources, organising and co-ordinating the training of inspectors, managers and persons whose work involves such sources, ensuring the proper accounting of ionising radiation sources and guaranteeing emergency preparedness. The RDC inspectors may inspect premises where ionising radiation sources are used and if necessary collect samples.

The State Border Guards, in co-operation with the customs authorities, and the RDC conduct inspections at the State's border. The RDC, in co-operation with institutions authorised by the Ministry of the Interior, verifies physical protection and emergency preparedness measures.

RDC is also the competent authority with respect to the transport of nuclear and radioactive materials and the surveillance of compliance with safety regulations and standards applicable to such operations.

The establishment and updating of national databases on sources, practices, operators and exposures are also within the scope of primary tasks defined by the 2000 Act for RDC. RDC has prime responsibility to maintain the state system of accounting and control of nuclear materials and provides reports to the IAEA under safeguards agreement and additional protocol to the safeguards. Since 2002 RDC is responsible for the early warning system in the event of a nuclear accident and for laboratory measurements and data processing. Finally, RDC is the competent authority for all other activities, which fall within the scope of the Act on Radiation Safety and Nuclear Safety.

The Radiation Safety Board, also created by the 2000 Act, is responsible for advising State and local Government institutions and authorities, including the RDC on issues related to radiation protection and nuclear safety and for promoting co-operation between various institutions to strengthen radiation safety.

In 1991, Latvia established a radioactive waste management organisation Radons, which was entirely State-owned and reported to the MEPRD. On 20 December 2000, Radons was transformed into RAPA. The RAPA is financed by the State and also receives supplementary funding from the import duty on radioactive substances. It is still under the authority of the Ministry of Environment.

The RAPA's main task is to collect all radioactive waste from its site of origin, processing and disposal. The RAPA also carries out dosimetric measurements and radiological investigations at its work places and controlled areas. This State enterprise is also responsible for monitoring the shut-down Salaspils nuclear reactor. The RAPA is entrusted with the development of safety assessments of disposal vaults for radioactive waste, establishment of an information centre and modernisation of technological procedures. Environmental Protection Fund of the Ministry of Environment is responsible for managing the financial resources made available to it for environmental purposes. It has its own management, but policy decisions are made by the Board, which is headed by the Ministry of the Environment and has representatives from the Ministry and certain nominated institutions.

The Latvian Development Agency (*Latvijas Attīstības Aģentūra*) is responsible for licensing exports, imports and transits of strategic materials. The Commission for Strategic Export and Import grants a licence for shipment with nuclear items only if the applicant already possesses a licence for such items issued by the RDC.

The Ministry of Interior with its supervised institutions has responsibility for the radiation control on State borders (the Border guards), assessments and inspections of physical protection (Security Police), and management of radiological or nuclear accidents (The Fire and Rescue Services).

Legislation in Force

Act on Radiation Safety and Nuclear Safety¹

The Act on Radiation Protection and Nuclear Safety,² which was adopted on 1 December 1994 and entered into force on 1 January 1995, previously governed all activities involving radioactive or nuclear materials and all sources of ionising radiation. This Act was repealed and replaced by the Act on Radiation Safety and Nuclear Safety, which was adopted on 26 October 2000 and entered into force on 21 November 2000. Since amended in 2002, it now further aims to ensure the protection of people and the environment against the harmful effects of ionising radiation, to set out safety requirements for ionising radiation sources, and also to establish the rights and responsibilities of state bodies, physical persons and legal entities in the field of radiation protection and nuclear safety.

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1. The full text in English of the Radiation Safety and Nuclear Safety Act was reproduced in the Supplement to *Nuclear Law Bulletin* No. 67 (June 2001) and is available on the NEA Web site at: www.nea.fr/html/law/nlb/nlb-67/003_019.pdf.
 2. The full text in English of the Radiation Protection Act was reproduced in the Supplement to *Nuclear Law Bulletin* No. 55 (June 1995) and is now available on the NEA Web site at: www.nea.fr/html/law/nlb/NLB-55-SUP.pdf.

The Act contains eight chapters. It establishes the basic principles governing the use of ionising radiation sources and nuclear safety including, *inter alia*, the principles of justification, optimisation, dose limitation, licensing and the obligation to maintain insurance against third party liability and occupational accidents.

The Act establishes a new regulatory authority under the supervision of the Ministry of Environment, the Radiation Safety Centre (RDC) (see *supra* under Competent Nuclear Authorities).

A system of licensing provides that licences for both commercial and non-commercial operations are to be issued by the RDC.

Under the Act, an operator is required to ensure the protection of all exposed workers, whether employed on a permanent or independent contractual basis, the public and the environment against harmful effects of ionising radiation. The Act also provides for information of the workers, the state bodies and the population on potential radiation accidents and measures to be taken to protect the public in such situations.

Activities involving ionising radiation sources must be carried out by trained workers. Such workers must use proper equipment and conduct measurements of doses received. Additional protective requirements apply to the employment of persons aged between 16 and 18 years, pregnant women and breast-feeding mothers.

The Act provides information on radiation safety measures. The RDC and Security Police are responsible for controlling the physical protection of ionising radiation sources. It also establishes the requirements governing the packaging, marking and supply of ionising radiation sources.

Chapter seven is devoted to radioactive waste. The importation of radioactive waste is prohibited. The Cabinet of Ministers establishes requirements governing practices involving radioactive wastes and related materials and sets out the procedure for the dismantling of ionising radiation equipment that does not contain radioactive substances.

The provisions of the Act on Radiation Safety and Nuclear Safety concerning nuclear third party liability are consistent with the Vienna Convention, to which Latvia is a Party:

- the maximum amount of liability for nuclear damage is set at 80 million Latvian lats (LVL);³
- the operator is exclusively liable for nuclear damage originating in his installation;
- the major portion of compensation will be provided by the State, while the RAPA will cover liability up to LVL 4 million⁴ through an insurance system.

3. On 1 December 2003, LVL 80 million corresponded to approximately EUR 122 million.

4. On 1 December 2003, LVL 4 million is the equivalent of EUR 6 million.

Other Relevant Legislation

Radiation Protection Regulations

To implement the 2000 Act on Nuclear Safety and Radiation Safety, the Cabinet of Ministers approved a number of regulations covering all major aspects of radiation safety and nuclear safety. Most of them aim also to implement relevant European Regulations on the subject.

In 1997 the Cabinet of Ministers approved the Regulations on Protection against Ionising Radiation. These Regulations have been repealed by the Regulations on Protection against Ionising Radiation issued on 9 April 2002. They establish national Basic Safety Standards, based upon IAEA Basic Safety Standards and Council Directive 96/29/Euratom laying down basic safety standards for the protection of the health of workers and the general public against the dangers resulting from ionising radiation. They contains provisions on radiation safety and nuclear safety measures, dose limits, protection of workers, apprentices and students, radiation safety and nuclear safety requirements for ionising radiation sources, protection of the population against ionising radiation, protection against natural and artificial sources of ionising radiation and protective measures to reduce exposure. They also contain provisions on the new regulatory system.

In 2001, the Cabinet of Ministers approved five regulations related to the licensing procedures (see *infra*), which replaced the Regulations Concerning Licences and Permits for Activities Dealing with Radioactive Substances and Other Ionising Radiation Sources (1996).

The Regulations on Activities involving Ionising Radiation Sources, which do not require a Special Permit (Licence) or Permit, issued on 3 July 2001, govern exemptions from licensing requirements. The main numeric values are in compliance with those found in the IAEA Basic Safety Standards and Council Directive 96/29/Euratom of 13 May 1996. The Regulations also set out criteria for exemption of practices involving thorium-containing welding electrodes and smoke detectors, or consumer and technical products containing naturally-occurring radioactive materials.

The Regulations on the State Duty for the issue of a Special Permit (Licence) or Permit for Activities involving Ionising Radiation Sources, issued on 3 July 2001, define four groups of radiation sources according to radioactivity and/or dose rate.

The Regulations on the Criteria necessary to obtain a Special Permit (Licence) or Permit for Activities involving Ionising Radiation Sources, issued on 3 July 2001, provide that a legal entity is entitled to apply for a licence and a physical person for a permit for certain sources with very low activity. Permanent representation offices of foreign undertakings may also apply for a licence for practices involving sources of ionising radiation if such companies are registered as independent taxpayers and are enrolled on the Enterprise Register of the Republic of Latvia.

The Cabinet of Ministers also adopted Regulations on the Procedure for the Issue of a Special Permit (Licence) or Permit for Activities involving Ionising Radiation Sources and Procedure for Public Debate on the Establishment of Ionising Radiation Facilities of State Significance or on Essential Modifications thereto, on 3 July 2001.

In order to obtain a licence or permit, the applicant must complete a special declaration form which, along with a number of other documents, is reviewed by the Licensing Commission composed by the representatives from RDC, the Ministry of Environment and the Ministry of Welfare. Upon approval of the Licensing Commission the RDC issues the licence or permit. Once delivered, a licence

or permit is valid for a period of three years. However, any licence may be revoked should a breach of safety standards be detected during inspection. Upon expiration, the licence is not automatically renewed, and a new application must be made.

The Regulations also introduce several other obligations for licence applicants, including the requirement to hold a public hearing for a licence for a research reactor or a radioactive waste repository. They furthermore introduce several specific requirements. For instance, they establish detailed exemption levels, based on the values used in the IAEA and European Union Basic Safety Standards. Further, they establish a new mechanism for supplementary funding of radioactive waste management by imposing an import duty on all radioactive materials. This import duty will be used partly by local municipalities, partly for investments in infrastructures used for radioactive waste management, and finally for decommissioning funds.

The Regulations on Minimal Insurance of the Civil Liability of Operator's Activities involving Ionising Radiation Sources, issued on 3 July 2001, define five groups of radiation sources according to radioactivity and/or dose rate. The first group is the nuclear facilities (limit LVL 4 million); the second group – other ionising radiation facilities of state significance (LVL 800 000); the third group – high activity sources (LVL 400 000); the fourth group – medium activity (LVL 80 000) and the fifth – lowest risk facilities (LVL 1 000).

Regulations on Medical Contraindications for Practices Involving Ionising Radiation Sources

These Regulations issued on 28 December 2001 provide basic requirements for medical examinations. They establish criteria to use during medical examinations according to which physicians should decide whether or not a person is fit to carry out activities as a radiation worker. These Regulations repealed the Regulations of 17 March 1998 of the same name.

Regulations on Protection against Ionising Radiation in relation to Medical Exposure

The Regulations adopted on 5 March 2002, aim to implement Council Directive 97/43/Euratom on health protection of individuals against the dangers of ionising radiation in relation to medical exposure. These Regulations contain provisions, *inter alia*, on justification, reference levels, responsibilities of the licensee, medical radiological procedures, dose control system, requirements for education of personnel and for equipment.

Regulations on Radiometric Control of Cargo and Goods at the State Border

These Regulations were approved on 25 June 2002 and repealed the Regulations on Radiation Control at the Border. These Regulations provide for the detection by border guards, and the identification, investigation and assessment by the RDC of unknown ionising radiation sources on national territory, or discovered at the border.

Regulations on the Control of Strategic Goods and Import of Radioactive Substances

These Regulations, adopted on 16 December 1997 amended in 2002 and in 2003, replace both the 1995 Regulations on the Export, Import and Transit of Strategic Goods and the Regulations on the Committee for Export and Import Control of Strategic Goods. They establish the control of export,

import, transit, production, storage and use of strategic goods in accordance with the international security interests and national interests of Latvia. The Regulations establish a new body: the Committee for Control of Strategic Goods, which issues licence and import certificates. The 1997 Regulations cover all aspects of the Nuclear Suppliers Group regime. The new amendments are based on Council Regulation No. 1334/2000 of 22 June 2000 setting up a Community regime for the control of export of dual-use items and technology.

Regulations on the Procedure Governing Activities Involving Nuclear Materials, Related Materials and Equipment

These Regulations, issued on 24 September 2002, establish a State System of Accounting for and Control of Nuclear Materials (SSAC) and implement the Additional Protocol to the Safeguards Agreement between Latvia and the IAEA. These Regulations repealed the Regulations of 14 April 1998 on the State System of Accounting and Control of Nuclear Materials. The Regulations include provisions on their information and notification requirements regarding the design of nuclear installations, nuclear materials and related materials and equipment, and a control programme outlining obligations of the operator in relation to inventory. Implementation of these Regulations is the responsibility of the operator, who nominates a responsible person to exchange information with the RDC.

Regulations on Protection against Ionising Radiation during the Transport of Radioactive Materials

These Regulations, issued on 3 July 2001, are fully based on the IAEA Regulations for the Safe Transport of Radioactive Material (TSR-1 and TSR-2) and repeal the Regulations on the Safe Transport of Radioactive Materials of 1998. The main modifications as compared to the TSR-1 involve the introduction of new types of packaging and the definition of dose limits for transport personnel as equivalent to exposed workers from category B.

Regulations on the Procedure for Packaging and Marking of Ionising Radiation Sources

These Regulations issued on 18 September 2001 establish requirements in relation to the packaging and marking of sealed and unsealed radiation sources and radiation apparatus.

Regulations on Practices involving Radioactive Waste Management and Related Materials

The Regulations on Practices involving Radioactive Waste and Related Materials issued on 19 March 2002 repealed the Regulations on Radioactive Waste Management adopted on 3 August 1999. These Regulations take into account the establishment of the RDC and incorporate some specific recommendations relating to improvements in waste characterisation, waste acceptance criteria for spent fuel sealed sources and final sealing of a repository.

These Regulations set out basic principles for radioactive waste management: limitation of individual and collective doses, justification of practices, minimisation of waste amount and protection of future generations. The Regulations establish clearance procedures for release into the environment and set out criteria for re-use, recycling and dispersion of waste, as well as waste acceptance criteria. They also prescribe the responsibilities of waste producers, radiation safety officers at facilities, RAPA, and RDC. The Regulations furthermore introduce long-term safety and environmental impact

assessments, and classify waste into four groups for accounting purposes (based on suggestions from IAEA and EU). Furthermore, they lay down requirements for handling and packaging (including standardisation of waste packs) and for transboundary movement of radioactive waste, and rules for marking radioactive waste disposal sites after final closure. They introduce the obligation to return spent sealed sources to producers and set out procedures governing international shipments of radioactive waste.

Regulations on Generic Principles for Exchange of Radioactive Waste

These Regulations were issued on 16 April 2002. They set out the basic principles which provide that exchanges of radioactive waste must be of benefit, in terms of safety and radiation protection, to both the sending country and the receiving country and must be approved by the competent authorities of both States. Furthermore, the exchange operations must comply with Community and national provisions governing radioactive waste management and with international agreements on this subject. To determine whether the exchange is of benefit to the countries concerned, a number of factors should be considered, including the risk to the public and the environment, and costs related to the management, storage and disposal of such waste.

Regulations on Physical Protection of Ionising Radiation Sources

These Regulations, issued on 4 November 2002, establish several groups according to their importance for physical protection and introduce the basic approach for simultaneously applicable protection methods: detection, assessment, delay and response. These Regulations are based upon IAEA Recommendations for physical protection of nuclear facilities and nuclear materials.

Regulations on the Requirements for Emergency Preparedness and Response

The Cabinet of Ministers approved Regulations on the Requirements for Emergency Preparedness and Response on 8 April 2003 and the National Emergency Preparedness Plan. These documents describe both the on-site and off-site emergency plans and response actions, including the large-scale actions to be taken in the event of an accident in the neighbouring countries. The governmental bodies co-ordinating the actions in the case of an emergency are the State Fire and Rescue Service and the RDC. RDC is responsible for supervision of operative actions at the accident site, but the State Fire and Rescue Service is responsible for larger scale accident activities.

Regulations on the Procedure for Control and Accounting of Exposure of Workers

Regulations on the Procedure for Control and Accounting of Exposure of Workers issued on 23 October 2001 are based on Council Directive 90/641/Euratom on the operational protection of outside workers exposed to the risk of ionising radiation during their activities in controlled areas. They introduce dose passports and centralised thermo-luminescent-dosimetry services by the RDC.

International Conventions

Nuclear Third Party Liability

- Latvia acceded to the 1963 Vienna Convention on Civil Liability for Nuclear Damage on 15 March 1995, and it entered into force in this country on 15 June 1995. Latvia also ratified the Protocol to amend the Vienna Convention on Civil Liability for Nuclear Damage on 5 December 2001, and it entered into force in this country on 4 October 2003.
- Latvia acceded to the 1988 Joint Protocol Relating to the Application of the Vienna Convention and the Paris Convention on 15 March 1995, and it entered into force in this country on 15 June 1995.

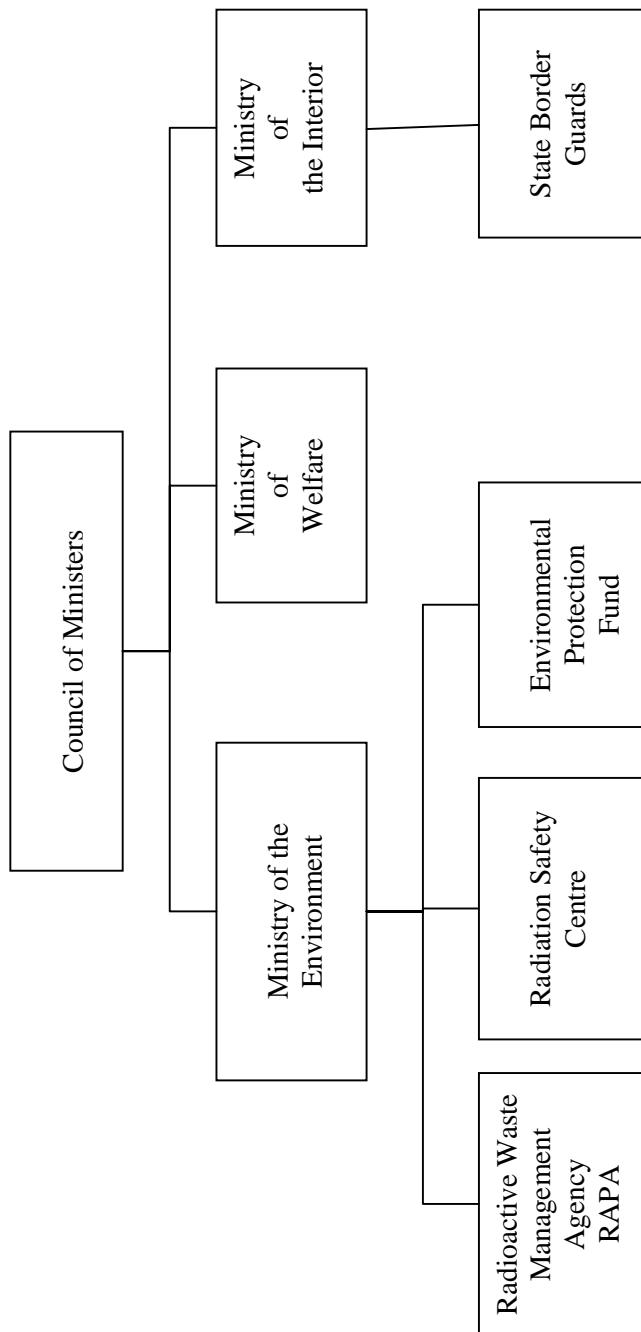
Other International Conventions

- Latvia ratified the 1960 Convention concerning the Protection of Workers against Ionising Radiation on 8 March 1994 and it entered into force in this country on the same date.
- Latvia acceded to the 1968 Treaty on the Non-Proliferation of Nuclear Weapons on 31 January 1992 and it entered into force in this country on the same date.
- Latvia acceded to the 1971 Treaty on the Prohibition of the Emplacement of Nuclear Weapons and other Weapons of Mass Destruction on the Sea Bed and the Ocean Floor and in the Subsoil thereof on 18 August 1992 and it entered into force in this country on the same date.
- Latvia acceded to the 1979 Convention on Physical Protection of Nuclear Material on 6 November 2002 and it entered into force in this country on 6 December 2002.
- Latvia acceded to the 1986 Convention on Early Notification of a Nuclear Accident on 28 December 1992 and it entered into force in this country on 28 January 1993.
- Latvia acceded to the 1986 Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency on 28 December 1992 and it entered into force in this country on 28 January 1993.
- Latvia acceded to the 1994 Convention on Nuclear Safety on 25 October 1996 and it entered into force in this country on 23 January 1997.
- Latvia ratified the 1996 Comprehensive Nuclear Test Ban Treaty on 20 November 2001.
- Latvia accepted the 1997 Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management on 27 March 2000 and it entered into force in this country on 18 June 2001.

Membership in Nuclear Organisations

Latvia is a member of the International Atomic Energy Agency (IAEA) and the Nuclear Suppliers Group.

LATVIA
Competent Authorities in the field of Nuclear Energy



LITHUANIA

Introduction

Lithuania has one nuclear power plant in operation, the Ignalina NPP, situated in Northeast Lithuania near the borders of Latvia and Belarus. The Ignalina NPP, a state-owned enterprise, operates two RMBK-1500 model reactors each with a capacity of 1500 MWe, which were commissioned in December 1983 and August 1987 respectively. They provide approximately 80% of the electricity produced in Lithuania. Units 1 and 2 are to be closed down in 2005 and 2009 respectively pursuant to Lithuania's process of accession to the European Union.

A repository for low- and intermediate-level radioactive waste, located at Maisiagala near Vilnius, was shut down in 1989. An interim dry storage facility for spent fuel was built and commissioned in 1999 on the Ignalina NPP site. In 2001 the Radioactive Waste Management Agency (RATA) assumed the responsibility for the safe management and final disposal of all radioactive waste, and is considering the construction of a new near-surface repository to store low and medium level radioactive waste.

The Joint Stock Company, *Lietuvos Energija*, (formerly the Lithuanian State Power System – LSPS) is the national utility responsible for the distribution of electricity.

Competent Nuclear Authorities

Several regulatory authorities and Government ministries are responsible for governing activities in the nuclear field. The State Nuclear Power Safety Inspectorate (*Valstybinė Atominės Energetikos Saugos Inspekcija* – VATESI) is the primary national institution responsible for the regulation of nuclear energy. VATESI was established by Government Resolution No. 433 of 18 October 1991, and its Statute was approved in 1992. The new Statute of VATESI was approved by Government Resolution No. 1014 of 1 July 2002. In accordance with its Statute, VATESI management is directed by the Head of VATESI and a consultative body called the Board of VATESI. The Board is comprised of two Members of Parliament, two representatives of Ministries, two nuclear experts and the Head of VATESI. The Board is empowered to advise the Government of the Republic of Lithuania and VATESI on nuclear safety issues.

VATESI is composed of five main departments: Nuclear Material Control, Licensing, Resident Supervision at the Ignalina Nuclear Power Plant, Decommissioning and Radiation Protection, and Safety Assessment. The main duties of VATESI are the state regulation of:

- nuclear safety at the State Enterprise Ignalina Nuclear Power Plant and other nuclear facilities;
- radioactive waste management in nuclear facilities;

- the safe use of nuclear materials;
- the physical protection of nuclear facilities and radioactive materials;
- radiation protection in the Ignalina Nuclear Power Plant and other nuclear facilities.

VATESI approves nuclear safety rules and guides, issues licences for the activities related to nuclear safety and controls adherence to the requirements set out in licences and safety rules.

VATESI is also habilitated to take measures affecting the operation of nuclear facilities; such as to suspend or revoke licences, levy fines for violations of safety rules or licence conditions and order the suspension or discontinuance of nuclear power plant activities.

The Government established the Nuclear and Radiation Safety Advisory Committee (NRSAC) in May 1993. In July 1997, this Committee was reorganised as the Nuclear Safety Advisory Committee. The Committee's members include experts from Lithuania, Germany, Finland, France, Japan, the USA, Sweden, Ukraine and the United Kingdom, who assist the Government in resolving problems in the field of nuclear energy. The Committee works with the Government, VATESI, the Ministry of Economy and with the Management of two state enterprises: Ignalina Nuclear Power Plant (INPP) and the Radioactive Waste Management Agency (RATA). The Committee provides advice on upgrading nuclear safety and on the development of efficient regulatory infrastructure. The Committee receives full funding from the State budget.

The Ministry of Economy is responsible for the promotion of nuclear energy infrastructure and implementation of nuclear energy policy. In March 1997, the Ministry of Economy assumed certain responsibilities and duties in relation to nuclear energy management. Its Nuclear Energy and Radioactive Waste Management Department is divided into two sub-departments: the Nuclear Energy Division and the Ignalina NPP Problems Co-ordination Division. The Nuclear Energy Division supervises the nuclear energy sector and is responsible for the preparation of legal acts governing nuclear energy and nuclear safety and for co-ordination of assistance for nuclear safety improvements. The Ignalina NPP Problems Co-ordination Division was established in 2001 according to a plan of implementation of the National Energy Strategy, which provides for the closure of unit one at the Ignalina NPP. The task of the Division is to supervise the Ignalina NPP decommissioning sector and to prepare regulatory acts governing decommissioning and radioactive waste management.

The Ministry of Economy established a Board of Ignalina NPP management to solve management and finance problems. The Board's members include experts from the Ministry of Economy, Ignalina NPP, the Ministry of Finance, the Ministry of Environment and the Ministry of Social Security and Labour. The Ministry of Economy also comprises a Strategic Goods Export Control Division which is responsible for the issue of licences for the export, import and transit of nuclear, radioactive and other materials used in nuclear technology, nuclear equipment and dual-use items.

Pursuant to the Law on Radioactive Waste Management of 1999, the Ministry of Economy established a Radioactive Waste Management Agency (RATA) on 16 May 2001. This state enterprise is responsible for the safe management and final disposal of radioactive waste.

The Radiation Protection Centre (RPC), established on 1 January 1997 under the Ministry of Health, co-ordinates the activities of public administration and local Government which exercise state supervision and control of radiation protection, and monitor public exposure. The RPC is responsible for drafting legislation on radiation protection, licensing users of sources of ionising radiation, and

monitoring radioactive contamination of air, drinking water, foodstuffs and raw materials and other objects which may cause exposure to humans. The RPC carries out investigation of radiological accidents, forecasts their consequences and presents proposals on preventative and remedial measures. Under the 1999 Regulations on Licensing of Practices Involving Sources of Ionising Radiation, the Radiation Protection Centre can suspend, renew or withdraw the licences for operating sources of ionising radiation as well as for the transport of ionising sources and radioactive waste.

The Ministry of the Environment co-ordinates environmental impact assessments and establishes the limits of radioactive emissions into the environment. It also issues authorisations for the transport of radioactive substances and radioactive waste both inside the country and for export and import transit. This Ministry together with VATESI approves technical regulations for the design and construction of nuclear facilities. After consultation with VATESI and the Ministry of Health, the Ministry of the Environment establishes procedures for the import, export, transit and transportation of radioactive materials and radioactive waste and for return of used sealed sources. It is also responsible, together with the Ministry of Health, for establishing radiation protection standards and monitoring their compliance.

The Ministry of Transport and Communication participates in the drafting of legislation and regulates training in the field of transport of nuclear and radioactive materials.

The Ministry of National Defence is responsible for the security of transportation of nuclear and radioactive material across the territory of the country.

The Department of Civil Protection of the Ministry of Defence is the co-ordinating institution for preparation of emergency plans and their implementation in the event of an accident in the Ignalina NPP. The Department organises training sessions for population protection in the event of a nuclear accident.

The Ministry of Interior ensures fire protection and physical protection of the nuclear power plant and other nuclear facilities, and is responsible for preparation, co-ordination and implementation of anti-terrorist action plans. It also investigates cases of theft and illegal possession of nuclear and radioactive materials.

The State Security Department exercises prevention of sabotage and terrorist acts as well as other offences aimed at damaging the interests of State security at nuclear facilities and on transportation routes of radioactive materials.

The Government Emergency Commission (GEC), in the event of a nuclear accident, is responsible for the management of the accident and the elimination of its consequences. To this end it co-ordinates the activities of all the bodies and forces involved in the management of the nuclear accident. The GEC must periodically report to the President of the Republic, the Parliament and the Government on the progress of the management of any accident, organise evacuation of the population from endangered areas and instruct the population on radiation protection matters.

In June 2002, pursuant to the Law on the Decommissioning Fund for the Ignalina Nuclear Power Plant, the Government established the Council of the National Ignalina NPP Decommissioning Support Fund. This Council is composed of seven members appointed by the Government. The Council has responsibilities to take decisions as to which decommissioning measures will be financed from the assets of the Fund.

Legislation in Force

Law on Nuclear Energy

Law No. I-1613 on Nuclear Energy¹ was adopted on 14 November 1996 and entered into force on 1 January 1997. This Law establishes the rules applicable to the use of nuclear energy, provides a legal framework for nuclear activities and establishes the competence of State institutions involved in nuclear activities. The Law provides a legal basis for activities of legal entities and natural persons in the field of nuclear energy, safety and radiation protection and basic requirements for the construction, operation, decommissioning and licensing of nuclear facilities. The Law also provides for the export, import and transportation of nuclear materials, radioactive waste management and the accounting and control of nuclear materials, the physical protection, and emergency preparedness.

As regards nuclear third party liability, the Law adopts the principles contained in the 1963 Vienna Convention on Civil Liability for Nuclear Damage to which Lithuania is a Party. An operator is liable for personal injury or property damage originating in his installation. The amount of nuclear liability of the operator is limited to the amount, in Lit, equivalent to the minimum amount established in section V of the Vienna Convention. Environmental damage may also be compensated. Nuclear operators are required to obtain and maintain insurance to cover their liability. In the event that the funds of the operator are insufficient to cover all damages the Government guarantees payment of the balance. The prescription period for filing a claim for compensation is ten years from the date on which personal injury or property damage was suffered.

Several amendments have been made to the Law on Nuclear Energy:

- Law No. IX-596 of 13 November 2001 aims to strengthen the physical protection of nuclear facilities and nuclear materials. VATESI is now responsible for adopting regulations governing physical protection and monitoring their implementation. Further, the definition of nuclear safety was redrafted to cover physical protection.
- Law No. IX-1688 of 3 July 2003 modifies the licensing system of nuclear activities in Lithuania as of 1 January 2004. Under the new licensing system VATESI will not license contractors of nuclear operators.

*Law on Radiation Protection*²

Law No. VIII-1019 on Radiation Protection was adopted by the Lithuanian Parliament on 12 January 1999 and came into force on 1 April 1999. The Law establishes the legal basis of radiation protection and aims to protect the population and the environment from the harmful effects of ionising radiation. This legislation is divided into ten Chapters governing, *inter alia*, State management of radiation protection, licensing, radioactive waste and ionising radiation sources, control of foodstuffs, requirements for medical exposure, dose limitation and liability.

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1. The full text in English of this Law was reproduced in the Supplement to the *Nuclear Law Bulletin* No. 60 (December 1997) and is available on the NEA Web site at: www.nea.fr/html/law/nlb/60-lithuania.pdf.
 2. The full text in English of this Law was reproduced in the Supplement to *Nuclear Law Bulletin* No. 64 (December 1999) and is available on the NEA Web site at: www.nea.fr/html/law/nlb/Nlb-64/radprotectionlaw.pdf.

Law on the Management of Radioactive Waste³

Law No. VIII-1190 on the Management of Radioactive Waste was adopted on 20 May 1999 and entered into force on 9 June 1999. This instrument establishes the rights, duties and functions of the state executive and supervisory authorities and of persons and legal entities involved in radioactive waste management, including its export and transit. The Law is divided into ten Chapters governing, *inter alia*, licensing, responsibilities of waste generators, establishment of the Radioactive Waste Management Agency and requirements concerning radioactive waste management facilities, including their siting, design, construction, commissioning, operation, decommissioning and control after closure.

VATESI has the primary role in regulating the safety of radioactive waste management. This includes the responsibility for issuing licences for activities related to radioactive waste management, including the design, construction, operation, decommissioning or permanent closure of radioactive waste management facilities. The Ministry of Environment together with, the Radiation Protection Centre of the Ministry of Health and VATESI is also responsible for setting out procedures applying to import, export, transit and transport of radioactive waste within the country. Furthermore, the Radiation Protection Centre is responsible for issuing licences for radioactive waste transport.

The burden of all expenses related to radioactive waste management lies with the waste generator until the radioactive waste is transferred to the Radioactive Waste Management Agency or is exported from Lithuania.

The Law provides for the creation of a storage facility or repository as well as a Radioactive Waste Management Agency, which was established on 16 May 2001 and funded by a Radioactive Waste Management Fund.

Law Regulating the Import, Export and Transport of Strategic Goods and Technology

On 5 July 1995, the Lithuanian Parliament approved Law No. I-1002 regulating the import, export and transport of strategic goods and technology. The aim of this Law is to regulate activities that could contribute to the proliferation of nuclear weapons and to ensure the implementation of international agreements prohibiting such proliferation. The Law establishes lists of goods subject to control as well as lists of countries with which all import or export of goods subject to control is prohibited.

Licences are necessary for all goods subject to control, and are issued by the Ministry of Economy. The Ministries of the Environment, Defence, Finance and various other State entities, whose activities involve goods subject to control, must consult the Ministry of Economy on any decisions concerning such goods.

Law on the Decommissioning of Unit 1 at Ignalina NPP

Law No. VIII-1661, adopted on 2 May 2000, establishes the legal basis for the decommissioning of Unit 1 at the Ignalina Nuclear Power Plant (INPP). It states that preparatory activity for the

3. The full text in English of this Law was reproduced in the Supplement to *Nuclear Law Bulletin* No. 64 (December 1999) and is available on the NEA Web site at : www.nea.fr/html/law/nlb/Nlb-64/radwastemgmtlaw.pdf.

decommissioning of Ignalina 1 shall end no later than 1 January 2005. The exact date of its final shut-down shall be decided by the Government, following its consideration of a decommissioning programme and a decommissioning plan, including the future financing of such decommissioning by the Republic of Lithuania and sources of international financial assistance. The National Energy Strategy adopted in 2001 provided that the closure of Unit 1 was to take place by year 2005 and pursuant to the amended National Energy Strategy adopted in 2002, Unit 2 is to be closed in 2009.

Decommissioning of Ignalina 1 shall be financed from the INPP Decommissioning Fund, international financial assistance and bank loans.

Law on the Decommissioning Fund for the Ignalina Nuclear Power Plant

This Law entered into force on 1 January 2002 and provides for the establishment of a new Ignalina NPP Decommissioning Fund. This Fund is financed in particular from a percentage of the profit made by Ignalina NPP through electricity production; voluntary contributions from foreign countries, international organisations, financial institutions and legal entities of Lithuania; and income gained from the sale of property during decommissioning. A Fund Council, consisting of seven members appointed by the Government manages the Foundation.

The assets of the Fund are used to finance technical and social projects related to the decommissioning of Ignalina NPP; management, final disposal and long term storage of radioactive waste and spent fuel from Ignalina NPP as well as compensation for nuclear damage. Finally, the Law provides that the assets currently available in the Fund for the Decommissioning of the State Enterprise Ignalina NPP established by Governmental Resolution No. 1403 are to be transferred to the Ignalina NPP Decommissioning Fund.

Other Relevant Legislation

Regulations on the Licensing of Nuclear Activities

The Regulations on the Licensing of Nuclear Activities, prepared by VATESI, were approved by Government Resolution No. 103 of 27 January 1998. The procedure for licensing nuclear activities is not strictly centralised in Lithuania. Under these Regulations, VATESI is responsible for issuing licences: for the design, construction, modification, operation and decommissioning of nuclear facilities. The Ministry of the Environment is responsible for issuing licences for the acquisition, possession and transportation of radioactive materials. The Ministry of Economy issues licences for the export, import and transit of nuclear, radioactive and other materials used in nuclear technologies, nuclear equipment and dual-use goods. Pursuant to amendments of the Law on Nuclear Energy adopted on 3 July 2003 by the Law No. IX-1688, the licensing system of nuclear activities in Lithuania was changed (see *supra* under the same section).

Regulations on Licensing of Practices Involving Sources of Ionising Radiation

These Regulations were approved by Governmental Decree No. 653 of 25 May 1999. Under these Regulations it is prohibited to produce, operate, market, store, assemble, maintain, repair, recycle, and transport sources of ionising radiation and handle radioactive waste without a licence issued by the Radiation Protection Centre.

Resolution Approving the Decommissioning Programme for Unit 1, Ignalina NPP

Pursuant to the 2000 Law on Decommissioning of Unit 1 at the Ignalina NPP (INPP), the Government issued Resolution No. 172 approving the Decommissioning Programme on 19 February 2001. The Resolution empowers the Ministry of Economy to implement the programme together with a Commission set up under Decree No. 231 of 29 February 2001 to co-ordinate the implementation of the INPP-related provisions contained in the National Energy Strategy. The programme aims, in particular, to ensure safe maintenance of the INPP during the preparation for, and actual decommissioning of, Unit 1 and to mitigate any negative social and economic effects on Lithuania, the inhabitants of the region and the staff of the INPP as a result of the decommissioning.

The Rules of Ignalina NPP Decommissioning Fund

In accordance with the requirements of the Ignalina NPP decommissioning Fund Law, the Government, by its Resolution of 17 April 2002, approved Rules of Ignalina NPP Decommissioning Fund. The rules cover the principles of the Fund's administration, management, keeping and use of its resources.

The Government, by its Resolution of 12 June 2002, approved the Board of Ignalina NPP Decommissioning Fund. The Board decided which decommissioning measures should be financed from Ignalina NPP Decommissioning Fund.

International Conventions

Nuclear Third Party Liability

- Lithuania acceded to the 1963 Vienna Convention on Civil Liability for Nuclear Damage on 15 September 1992 and it entered into force in this country on 15 December 1992. Lithuania also signed the 1997 Protocol to Amend the Vienna Convention on 30 September 1997.
- Lithuania acceded to the 1988 Joint Protocol relating to the Application of the Vienna Convention and the Paris Convention on 20 September 1993 and it entered into force in this country on 20 December 1993.
- Lithuania signed the 1997 Convention on Supplementary Compensation for Nuclear Damage on 30 September 1997.

Other International Conventions

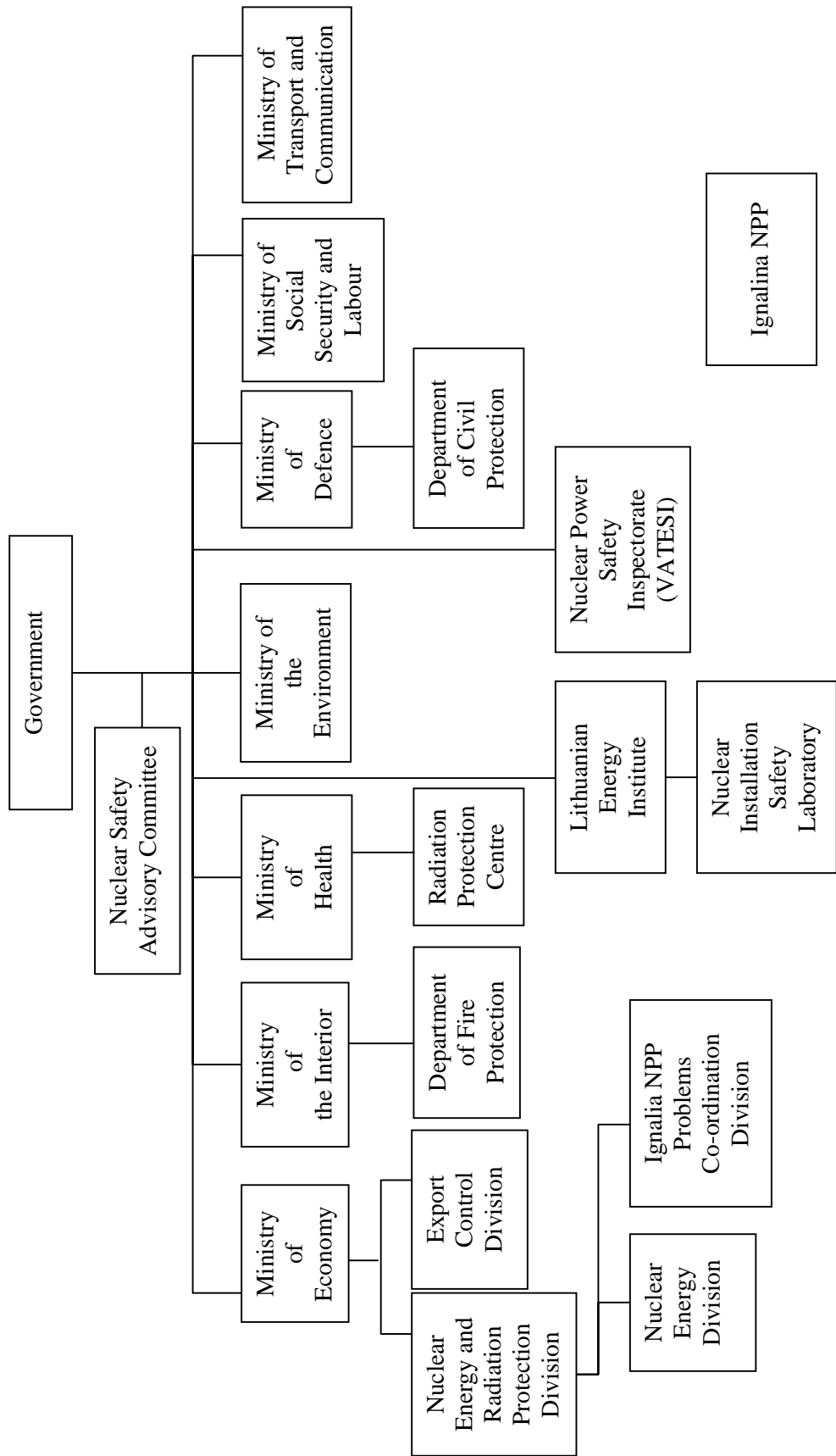
- Lithuania acceded to the 1968 Treaty on the Non-Proliferation of Nuclear Weapons on 23 September 1991 and it entered into force on the same date.
- Lithuania acceded to the 1979 Convention on the Physical Protection of Nuclear Material on 7 December 1993 and it entered into force in this country on 6 January 1994.

- Lithuania acceded to the 1986 Convention on Early Notification of a Nuclear Accident on 16 November 1994 and it entered into force in this country on 17 December 1994.
- Lithuania acceded to the 1986 Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency on 21 September 2000 and it entered into force in this country on 22 October 2000.
- Lithuania ratified the 1994 Convention on Nuclear Safety on 12 June 1996 and it entered into force in this country on 24 October 1996.
- Lithuania ratified the 1996 Comprehensive Nuclear Test Ban Treaty on 7 February 2000.
- Lithuania signed the 1997 Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management on 30 September 1997.

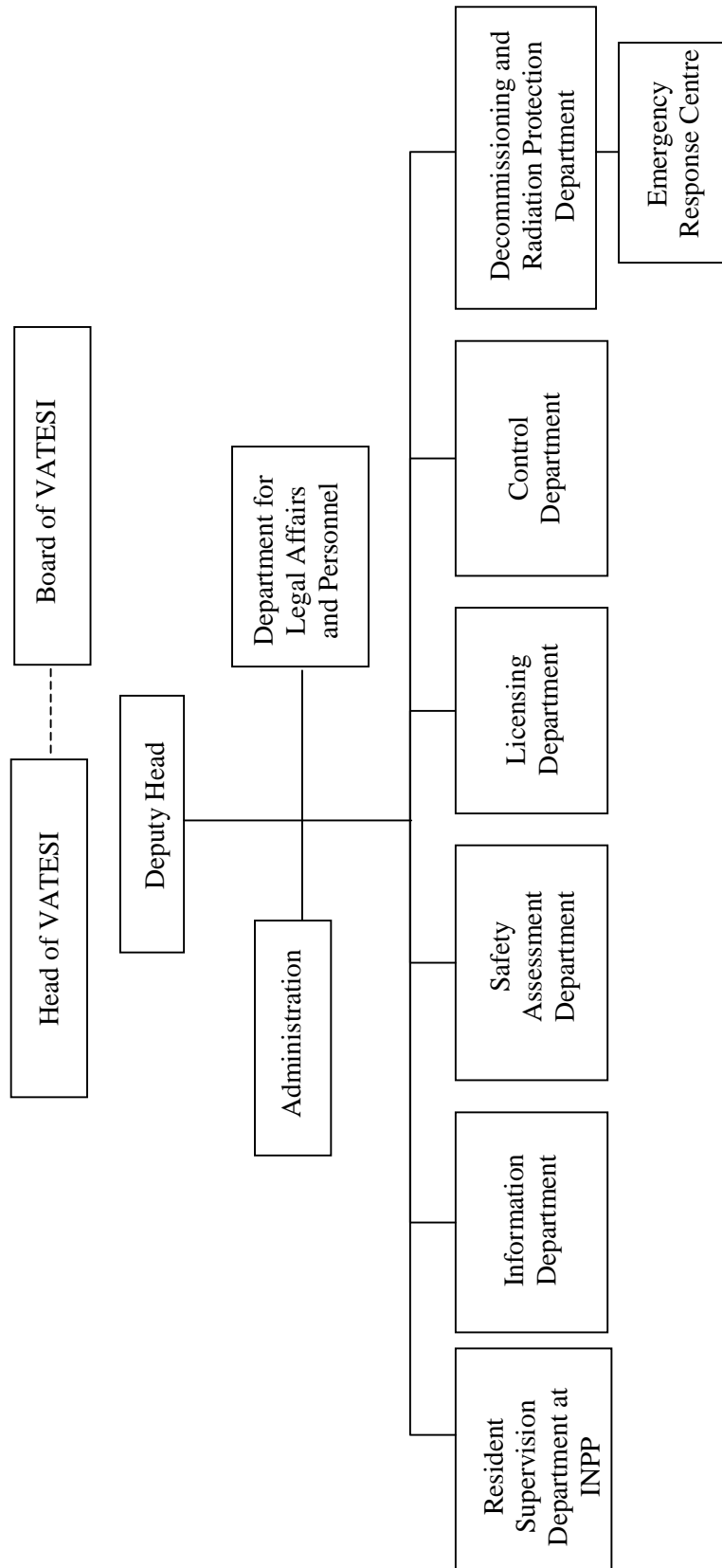
Membership in Nuclear Organisations

Lithuania is a member of the International Atomic Energy Agency (IAEA) and the Ignalina NPP operator is a member of the World Association of Nuclear Operators (WANO).

LITHUANIA
Competent Governmental Bodies in the field of Nuclear Energy



LITHUANIA
Organisational chart of VATESI



FORMER YUGOSLAV REPUBLIC OF MACEDONIA

Introduction

There are no nuclear power plants or reactors in the former Yugoslav Republic of Macedonia at present.

Competent Nuclear Authorities

The Department for Radiation Safety established by the Law on Protection against Ionising Radiation and Radiation Safety of 4 July 2002 is empowered to carry out activities in the field of radiation protection. It is responsible for, *inter alia*:

- issuing licences for the import, export, distribution, transfer, transport, storage, disposal and maintenance of ionising radiation sources;
- establishing intervention levels and other conditions governing radiation protection;
- establishing exemption levels for ionising radiation sources with low activity;
- carrying out inspections;
- keeping a National Register of ionising radiation sources and of persons occupationally exposed to ionising radiation;
- organising training of radiation workers and their supervisors;
- carrying out research in the radiation protection field;
- informing the public of radiation protection issues;
- intervening in the event of an emergency;
- putting forward the National Action Plan on protection of the public against ionising radiation.

The Department for Radiation Safety shall be managed by a Director who is directly responsible to the Government. The Department shall also establish a Commission for Radiation Safety, which will act as an advisory body for specific issues in the area of ionising radiation protection. The Commission will be composed of representatives of the different ministries as well as representatives of scientific and expert institutions and organisations in the radiation field.

The Ministry of Health is also responsible for radiation protection. It proposes amendments to legislative and regulatory instruments in the field of nuclear energy.

The Institute for Health Protection, under the authority of the Ministry of Health, is comprised of three departments responsible respectively for:

- monitoring the levels of radioactive contamination in the environment and in workplaces;
- assessment of occupational exposure to ionising radiation;
- medical control of occupationally-exposed workers;
- participating in the implementation of training on safe operation and management of ionising radiation sources.

These three Departments report annually to the Ministry of Health on the situation recorded and formulate recommendations in this respect.

Together with the Department for Radiation Safety, the Ministry of the Interior issues licences for transportation of radioactive materials.

Legislation in Force

Law on Protection against Ionising Radiation and Radiation Safety

The Law on Protection against Ionising Radiation and Radiation Safety was published in the Official Gazette on 4 July 2002 and entered into force on 12 July 2002. It repeals the Law on Protection against Ionising Radiation of 1991. The main objectives of the Law are to create a legal framework to govern State control and regulation of the use of ionising radiation sources and to protect the public and the environment from the harmful effects of ionising radiation.

A licence issued by the Department for Radiation Safety is necessary for all activities involving ionising radiation. The Law establishes requirements which must be met by legal entities performing activities involving the use of ionising radiation in relation to qualifications and training of personnel, equipment used, quality assurance, the security of their installations and emergency planning.

The Law is based on the principles of justification, optimisation and dose limitation and sets out the main principles for the protection of workers exposed to radiation (dosimetric control and health control of the personnel). Dose limits for the exposure of workers and the population to ionising radiation will be established by the Department for Radiation Safety. The Law also sets out the conditions governing the application of medical radiological procedures, including justification and optimisation of practices and the duties and training of medical personnel.

The Law establishes a system of registration, accounting and control of ionising radiation sources. The licence-holder is responsible for:

- providing protection and training for workers exposed to ionising radiation, for the population and the persons exposed during a medical examination;

- registering the ionising radiation sources including technical characteristics and specifications on safety and safe operation;
- establishing an emergency plan in case of accident, for the protection of the population and exposed workers; and
- accounting and control of ionising radiation sources.

They are furthermore responsible for collection, storage, conditioning, transport and disposal of the radioactive waste they produce. Until the location for the storage facility for disposal of radioactive waste has been designated, radioactive waste shall be stored on the premises of the licence-holder.

Finally, the Law contains rules concerning inspections, quality assurance and penalties. A National Action Plan for the protection of the population against the harmful effects of ionising radiation in case of radiation accident will be established.

Law on Transport of Dangerous Goods

This Law, adopted on 25 May 1990 and amended on 3 March 1993, regulates the transport of radioactive materials, in particular the conditions governing their packaging, modes of transport, loading, unloading and handling.

Other Relevant Legislation

The Constitution provides for the primacy of international agreements ratified by the former Yugoslav Republic of Macedonia over domestic laws. Therefore, the 1963 Vienna Convention, to which the former Yugoslav Republic of Macedonia succeeded on 8 April 1994, is a constituent part of the Macedonian legal system.

International Agreements

Nuclear Third Party Liability

The former Yugoslav Republic of Macedonia succeeded to the 1963 Vienna Convention on Civil Liability for Nuclear Damage on 8 April 1994, with effect in this country from 8 September 1991.

Other International Conventions

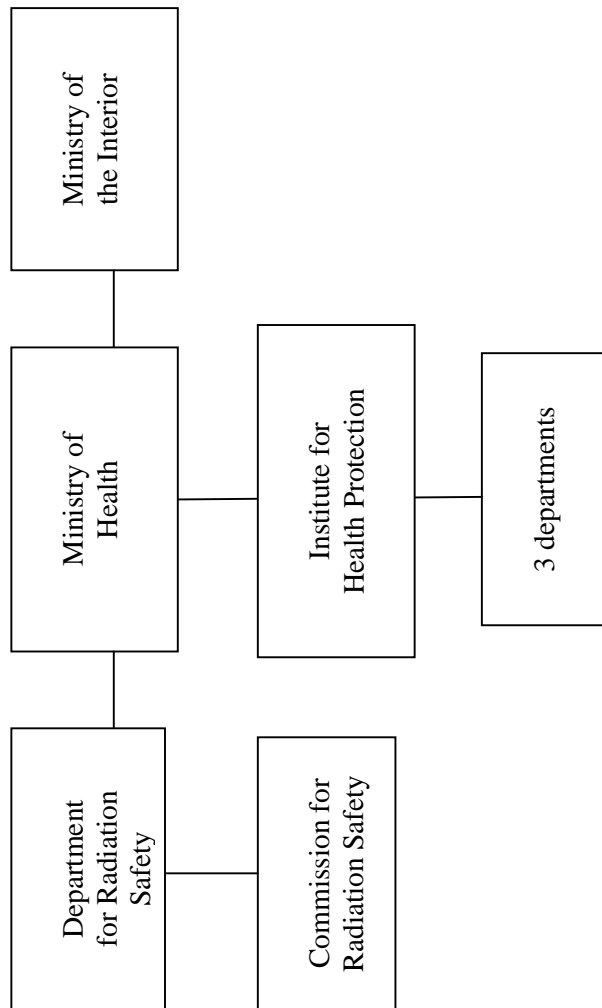
- The former Yugoslav Republic of Macedonia succeeded to the 1968 Treaty on the Non-Proliferation of Nuclear Weapons on 30 March 1995, with effect in this country, from 17 November 1991.
- The former Yugoslav Republic of Macedonia succeeded to the 1979 Convention on the Physical Protection of Nuclear Materials on 20 September 1996, with effect in this country from 17 November 1991.

- The former Yugoslav Republic of Macedonia succeeded to the 1986 Convention on Early Notification of Nuclear Accident on 20 September 1996, with effect from in this country 17 November 1991.
- The former Yugoslav Republic of Macedonia succeeded to the 1986 Convention on Assistance in the Case of Nuclear Accident or Radiological Emergency on 20 September 1996, with effect in this country from 17 November 1991.
- The former Yugoslav Republic of Macedonia ratified the 1996 Comprehensive Nuclear Test Ban Treaty on 14 March 2000.

Membership in Nuclear Organisations

The former Yugoslav Republic of Macedonia is a member of the International Atomic Energy Agency (IAEA).

FORMER YUGOSLAV REPUBLIC OF MACEDONIA
Competent Nuclear Authorities



REPUBLIC OF MOLDOVA

Introduction

There are no reactors or nuclear power plants in the Republic of Moldova at present. However, there is a radioactive waste disposal facility for low- and intermediate-level waste in the eastern part of Chisinau.

Competent Nuclear Authorities

The State Department of Civil Protection and Emergency Situations is the state regulatory body in the field of transport of dangerous goods. In this respect, it is responsible for licensing the transport of radioactive material, as well as drafting regulations on the transportation of dangerous goods by rail, road and air, together with the Ministry of Transport and the State Civil Aviation Administration. The Department is also competent as regards nuclear emergency preparedness, state supervision in the field of radiation protection and co-ordination of the activities of the national environmental monitoring network.

The State Department of Standards, Metrology and Technical Supervision is responsible for technical supervision of the use and disposal of radiation sources and radioactive waste, and issues safety certificates for the use, maintenance and repair of equipment using radiation sources.

The Ministry of the Environment is the licensing body for use, import and storage of ionising radiation sources and radioactive materials, following prior approval from the Ministry of Health.

The Ministry of Health is responsible for health standardisation of radiation sources, hygiene quality assessments and certification of foodstuffs, drinking water, construction materials and other items for dosimetric control of the medical staff and patients. Furthermore, the State Health Inspectorate, as a subdivision of the National Centre for Scientific and Applied Hygiene and Epidemiology within the Ministry of Health, is responsible for licensing and controlling radioactive waste management activities.

Legislation in Force

Law on Radiation Protection and Safety

On 24 December 1997, Law No. 1440-XIII on Radiation Protection and Safety was adopted by the Parliament and it came into force on 19 March 1998. The Law contains provisions on, *inter alia*:

- regulatory bodies in the field of radiation protection and safety and their areas of competence;

- rights and obligations of the competent bodies and of citizens in the field of radiation protection and safety;
- responsibilities of competent bodies in charge of facilities using ionising radiation sources.

Law on Licensing of Certain Activities

Law No. 332-XIV on Licensing of Certain Activities, adopted by the Parliament on 26 March 1999, repeals legislative instruments adopted by the former USSR. The objective of this legislation is to establish a licensing regime and procedures. In this respect, it sets out a list of activities which are subject to licensing. In particular, it states that the use, import, storage and transport of ionising radiation sources and radioactive materials require such a licence.

The Law also describes the characteristics of a licence, such as its form and content, its scope and validity, and determines the authorities competent to issue licences. The Department of Civil Protection and Emergency Situations is responsible for issuing licences for the transport of nuclear materials. It sets out a standard licence application in Annex 1.

Other Relevant Legislation

Decree on the Transportation of Dangerous Goods on the Territory of the Republic of Moldova

Governmental Decree No. 45 on the Transportation of Dangerous Goods on the Territory of the Republic of Moldova, adopted on 24 January 1994, sets out rules governing the transport of dangerous goods as well as measures to address the consequences of a possible accident. It nominates the Department of Civil Protection and Emergency Situations as the state regulatory body in the field of transport of dangerous goods. It furthermore provides that the Ministry of Transport and the State Civil Aviation Administration, together with the Department of Civil Protection and Emergency Situations, are responsible for drafting regulations on transport of dangerous goods by rail, road and air.

In this respect, on 9 June 1994, the Ministry of Transport and the Department of Civil Protection and Emergency Situations issued the Regulations on the Transport of Dangerous Goods by Road on the Territory of the Republic of Moldova, which are based on IAEA Safety Series No. 6.

Basic Standards of Radiation Protection, Requirements and Health Rules

These Basic Radiation Protection Standards adopted on 5 April 2001 are issued in conformity with standards and instruments of the IAEA, WHO and ILO, and in particular on the International Basic Safety Standards for Protection against Ionising Radiation and for the Safety of Radiation Sources.

Draft Legislation and Regulations

A Regulation on Safe Management of Radioactive Waste is being drafted. The draft covers, *inter alia*: the design of radioactive waste storage and disposal installations; management of radioactive waste; reception of radioactive waste in installations; transportation of radioactive waste; licensing; processing and final disposal; premises deactivation; emergency planning and protection measures; and radiation monitoring.

International Agreements

Nuclear Third Party Liability

The Republic of Moldova acceded to the 1963 Vienna Convention on Civil Liability for Nuclear Damage on 7 May 1998 and it entered into force in this country on 7 August 1998.

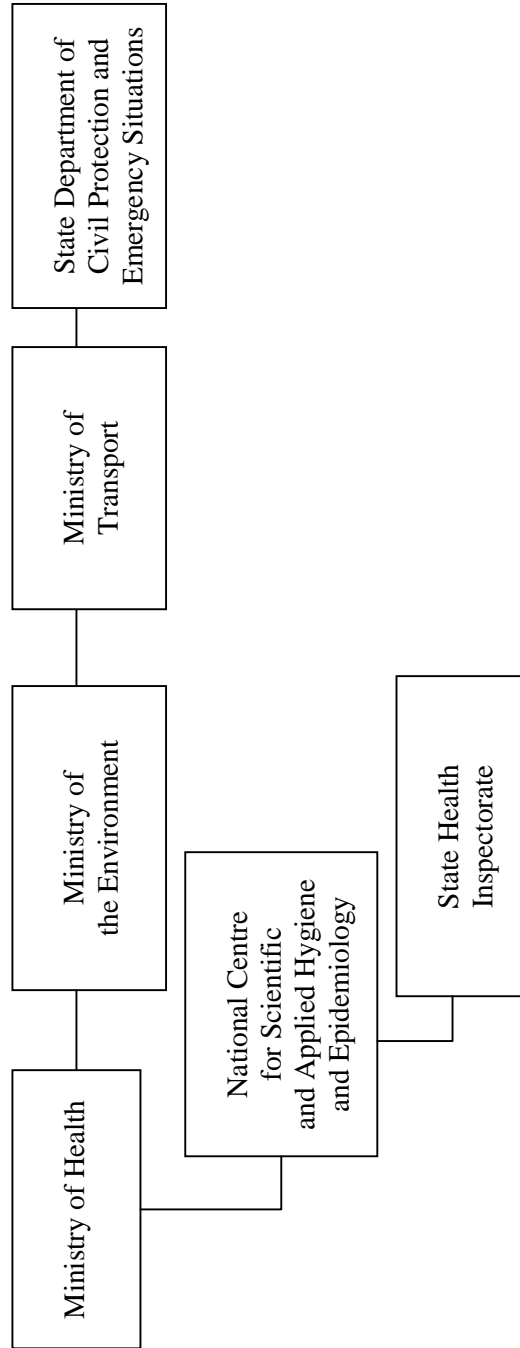
Other International Conventions

- The Republic of Moldova acceded to the 1968 Treaty on the Non-Proliferation of Nuclear Weapons on 11 October 1994 and it entered into force in this country on 10 November 1994.
- The Republic of Moldova acceded to the 1979 Convention on the Physical Protection of Nuclear Material on 7 May 1998 and it entered into force in this country on 6 June 1998.
- The Republic of Moldova acceded to the 1986 Convention on Early Notification of a Nuclear Accident on 7 May 1998 and it entered into force in this country on 7 June 1998.
- The Republic of Moldova acceded to the 1986 Convention on Assistance in the Case of Nuclear Accident or Radiological Emergency on 7 May 1998 and it entered into force in this country on 6 June 1998.
- The Republic of Moldova acceded to the 1994 Convention on Nuclear Safety on 7 May 1998 and it entered into force in this country on 5 August 1998.
- The Republic of Moldova signed the 1996 Comprehensive Nuclear Test Ban Treaty on 24 September 1997.

Membership in Nuclear Organisations

The Republic of Moldova is a member of the International Atomic Energy Agency (IAEA).

REPUBLIC OF MOLDOVA
Competent Nuclear Authorities



POLAND

Introduction

There are no nuclear power plants in Poland at present and construction of such a plant is not planned in the near future. There are, however, two research reactors, the Ewa reactor (a 1 MWe Tank WWR) and Maria reactor (pool type), located in the Institute of Atomic Energy at Swierk. The decommissioning of the Ewa reactor commenced on 24 February 1995.

Construction of a Russian designed VVER 440 model 213 nuclear power plant at Zarnowiec began in 1982, but was discontinued following a Parliamentary Resolution adopted in September 1990 on energy policy up to the year 2010. In addition, Poland has a spent fuel storage facility at Swierk and the National Radioactive Waste Repository Facility at Rozan.

Competent Nuclear Authorities

The National Atomic Energy Agency (*Panstwowa Agencja Atomistyki* – NAEA) is the main regulatory body in the nuclear field. The NAEA was established by the Atomic Energy Act of 10 April 1986 and its statute, main tasks and internal organisation are now set-out in the 2000 Atomic Energy Act and the Regulation of 7 December 2001.

The NAEA is a Government body directly responsible to the Minister of the Environment. The President of the NAEA is nominated by the Prime Minister upon proposal of the Minister of the Environment. The NAEA is in charge of radiological protection and nuclear safety matters including the following:

- drafting documents relating to national policies involving nuclear safety and radiological protection and publishing technical and organisational recommendations relating to these subjects;
- licensing the manufacturing, storage, processing, disposal, transport, trade of radioactive materials, radioactive sources and radioactive waste;
- licensing the construction, commissioning, operation and decommissioning of nuclear facilities and radioactive waste repositories;
- exercising control over the activities leading to actual and potential ionising radiation exposure of humans and the environment;
- assessing the national radiological situation in normal conditions and in radiological emergency situations and transmitting the relevant information to appropriate authorities;

- carrying out periodic controls in the field of physical protection.

The Centre for Radiation Emergencies is established within the NAEA and is in charge of the monitoring of the national radiation situation.

The Council of Atomic Affairs established on 17 December 2001 is a consultative and advisory body to the President of the NAEA. It is responsible for providing specialised knowledge and opinions related to the main fields of nuclear energy including radiological protection and nuclear safety. The Council is headed by a Chairperson nominated by the Prime Minister.

The NAEA's main licensing and supervision activities are related to the operation of the Maria research reactor, the Radioisotope Production Centre and the spent fuel storage facility, all of which are located at Swierk; the transport of radiation sources; the decommissioning of the Ewa reactor, and to the three thousand users of both open and sealed radiation sources in industry, medicine, research and agriculture (in accelerators and facilities using highly radioactive isotopes, etc.).

The Maria nuclear research reactor and other nuclear and radiation facilities are operated by the Institute of Atomic Energy, the Radioisotope Production Centre and the Institute of Nuclear Problems, which are independent institutions. These are three of the seven research institutes that exist in Poland, whose activities in relation to the strengthening of nuclear and radiation safety are co-ordinated and financially supported by the President of the NAEA.

The National Atomic Agency Board is the consultative body of the NAEA and is composed of a chairperson, who is also President of the NAEA, a vice-president who is Chief Inspector for Nuclear Safety and Radiation Protection, along with representatives from the Ministries of Economic Affairs, National Education, Defence, Internal Affairs and Administration, Foreign Affairs, Health and Environment. The aim of the Board is to resolve problems encountered in the Agency's various activities, by preparing programmes of action and studying the Agency's annual activity reports.

The Minister for Health is responsible for making regulations on safe applications of ionising radiation for medical purposes, including requirements applying in X-ray centres, and for making rules governing occupational requirements for the use of X-ray equipment.

The President of the NAEA, in conjunction with the Ministers for Transportation and Maritime Administration, Economic Affairs, Internal Affairs and Administration, and Foreign Affairs, establishes rules governing the accounting, surveillance and physical protection of nuclear materials and lays down conditions for the import, export and transit through Poland of nuclear materials, radioactive sources and devices incorporating such sources.

Under the 1986 Atomic Act, the Experimental Department for Radioactive Waste Neutralisation within the Atomic Energy Institute, supervised by the NAEA, was responsible for radioactive waste management. The 2000 Atomic Energy Act established the Radioactive Waste Management Plant, a state-owned public utility under the supervision of the Minister of Economic Affairs, which is headed by a Director nominated by the Minister of Economic Affairs.

The Minister for Environment, pursuant to Article 109(4) of the Atomic Energy Act, supervises the President of the NAEA and the Agency. The Minister also establishes detailed rules on limited access areas around nuclear facilities.

Legislation in Force

Atomic Energy Act

The Atomic Energy Act¹ was adopted on 29 November 2000 and entered into force on 1 January 2002. This Act repeals the Atomic Energy Act No. 70 of 10 April 1986. The Atomic Energy Act, as amended, regulates all activities related to the peaceful uses of nuclear energy and defines the role of competent authorities in the nuclear safety and radiation protection fields. It further identifies the operator's obligations and the principles of nuclear third party liability.

The Act sets out the principle that the primary consideration in the use of nuclear energy should be the protection of human life, health, property and the environment. A licence is required for any activity involving exposure to ionising radiation such as:

- manufacture, use, transport, storage and disposal of nuclear materials, radioactive sources, radioactive waste and spent nuclear fuel;
- construction, commissioning, operation and decommissioning of nuclear facilities and radioactive waste repositories;
- activities involving the intentional addition of radioactive material during the manufacture of medical products and the import and export of such products;
- intentional exposure of radioactive material to humans or animals for the purpose of medical and veterinary diagnosis, treatment and scientific research.

Licences are issued by the President of the NAEA with the exception of licences for the manufacture, purchase, commissioning and operation of X-ray devices used for medical purposes, which are issued by the regional Health Inspector.

Radiological Protection inspectors are empowered to monitor the compliance with nuclear safety and radiation protection requirements. The Act sets out the principles of justification, dose limitations and optimisation. The Act provides that the operator shall ensure health surveillance and personal protection of workers, in particular by providing them with dosimetric equipment and by organising periodic medical examinations. Radiation workers are required to possess appropriate skills and qualifications and to complete preliminary and periodic training courses organised by the operator. The Act also regulates the exposure of persons beyond the specified dose limits when carrying out special tasks and during emergency intervention. It further specifies the ionising radiation doses that individuals participating in an emergency intervention may be exposed to. The Act also governs exposure to ionising radiation for medical purposes.

The Act provides that the operator shall be responsible for the accountancy of nuclear materials, through inventories and inspections, and must also ensure the physical protection of nuclear materials during their manufacture, conversion, storage, use, disposal and trade. Central nuclear material inventory records shall be kept by the NAEA President. With regards to radioactive waste and spent fuel management, the Act provides that the operator of the facility where the radioactive waste and

1. The full text of this Act in English was reproduced in the Supplement to *Nuclear Law Bulletin* No. 68 (December 2001) and is available on the NEA Web site at: www.nea.fr/html/law/nlb/nlb-68/Poland.pdf.

spent fuel is stored shall be responsible for keeping appropriate inventories and ensuring their physical protection. During storage, adequate protection of the public and the environment must be guaranteed.

The Atomic Energy Act regulates the radiation emergency management and empowers, the operator, the region's governor or the Minister of Interior (depending on the type of emergency) to take actions aiming to eliminate the threat and the consequences of nuclear accident, including intervention measures.

The Act contains provisions on nuclear third party liability and compensation for nuclear damage. The provisions take into account the requirements of the 1963 Vienna Convention on Civil Liability for Nuclear Damage to which Poland is a Party. The operator is exclusively liable for nuclear damage to persons, property, the environment and loss of potential income, which originate in his installation or in the course of transportation of nuclear materials with the exception of damage caused directly by war hostilities and military conflict. The amount of liability of the operator is limited to 150 million Special Drawing Rights; however the compensation for insignificant environmental damage is limited to the reimbursement of actual and future costs of reinstatement measures taken to restore the environment. The operator must maintain financial security to cover his liability and in the event that the financial security is insufficient to cover all damages, the National Treasury guarantees payment of compensation. Whereas personal injury claims are not subjects to a prescription period, compensation claims for nuclear damage to property or the environment toll ten years after the date of the nuclear accident or three years after the date upon which the person suffering from nuclear damage had knowledge or should have had knowledge of the damage.

Other Relevant Legislation

Regulation on the Conditions for Issuing Licences for Activities involving the Use of Atomic Energy as set out in the Atomic Energy Act

This Regulation adopted by the Council of Ministers on 21 November 1995, sets out the licensing procedure and duties of the licensee, including compliance with nuclear safety and radiation protection requirements as established in the Atomic Energy Act and in Polish standards for nuclear industry.

Regulation exempting Certain Activities from Licensing

This Regulation was adopted by the NAEA President on 6 August 2002. The Regulation exempts activities where the radiation source is of very low activity or concentration, or where low level sources are contained in equipment conforming to specified construction requirements, thereby assuring a satisfactory level of radiation protection. Although exempt from licensing, these activities must nevertheless be registered to permit some level of control by the NAEA.

Regulation Laying down Dose Limits for Ionising Radiation

This Regulation of the Council of Ministers of 28 May 2002 lays down dose limits for ionising radiation. It defines dose limits for occupationally exposed persons, for persons in the vicinity of nuclear power plants and for persons exposed to radiation through everyday use of radiation-emitting products

Several regulations were recently undertaken in the field of nuclear safety and radiation protection:

- Regulation of the Council of Ministers of 6 August 2002 on nuclear regulatory inspectors;
- Regulation of the Council of Ministers of 6 August 2002 on basic requirements concerning controlled and supervised areas ;
- Regulation of the Council of Ministers of 6 August 2002 laying down rules on the type of work posts required for the assurance of nuclear safety and radiation protection, detailed terms and mode of licensing for candidates for the above work posts, and detailed terms and mode of licensing for radiation protection inspectors;
- Regulation of the Council of 5 November 2002 laying down rules on the registration of individual doses;
- Regulation of the Council of Ministers of 5 November 2002 laying down rules on radiation protection of external workers occupationally exposed in controlled areas;
- Regulation of the Council of Ministers of 17 December 2002 laying down rules on detailed conditions of safe work with sources of ionising radiation. It was amended by the Regulation of the Council of Ministers of 20 August 2003;
- Regulation of the Minister of Health of 24 December 2002 laying down rules on conditions of safe use of ionising radiation in medical applications, and on methods of internal control of fulfilment of these conditions.

Regulations on the Control of Nuclear Materials

A Regulation of 28 July 1987 of the President of the NAEA governs the accounting and control of radioactive sources and of devices incorporating radioactive sources emitting ionising radiation. The Regulation expressly states that these principles do not apply to such sources while they are in transit through the territory.

A Regulation of 20 October 1987 of the President of the NAEA governs the accounting and control of nuclear materials. These rules set out principles for record-keeping and control of nuclear materials which are being manufactured, processed, utilised, transferred or stored within the territory of the country. Excluded from the application of the rules are nuclear materials passing in transit through the territory. It also specifies the type of documentation that must be kept and details of inspections to be conducted.

The Regulation on the Registration and Monitoring of Ionising Radiation Sources, adopted by the NAEA President on 28 August 1997, amends an earlier Regulation on the Principles of Accountancy and Control for Ionising Radiation Sources.

Regulations governing the Import, Export and Transit of Nuclear Materials

Two Regulations of the Council of Ministers of 5 November 2002 lay down rules on imports into, exports from and transit through the Polish customs area of radioactive waste and spent nuclear fuel and also of nuclear materials, radiation sources and devices containing such sources.

Regulations on Physical Protection of Nuclear Materials

These Regulations, adopted on 31 July 2001, aim to implement the 2000 Atomic Energy Act by establishing various categories of nuclear materials and specifying what is considered adequate protection level for each of them. They further determine the organisational methods and technologies which should be used in the field of physical protection, as well as the appropriate procedures for periodic controls carried out by the President of the National Atomic Energy Agency.

Radioactive Waste Management

Regulation of the Council of Ministers of 3 December 2002 lays down rules on classification of radioactive wastes, their characterisation, controlling and records keeping as well as on conditions for storage of radioactive wastes and spent nuclear fuel.

The New Polish Criminal Code entered into force on 1 September 1998. Two new provisions dealing with nuclear energy and ionising radiation were introduced into Chapter XX of this Code. Article 163(1)(4) provides that a person responsible for an event which causes a threat to the life or health of a significant number of persons or considerable damage to property, through release of nuclear energy or ionising radiation, is liable to imprisonment for a period of one to ten years. The second of these provisions, Article 170(1) provides that whoever, without a licence or in breach of conditions attached to the licence, possesses, uses, produces, reprocesses, collects or otherwise deals with explosion devices or substances, radioactive materials, ionising radiation sources or other objects dangerous to the life or health of a significant number of persons or likely to cause considerable damage to property, is liable to imprisonment for a period of six months to eight years.

International Conventions

Nuclear Third Party Liability

- Poland acceded to the 1963 Vienna Convention on Civil Liability for Nuclear Damage on 23 January 1990 and it entered into force in this country on 23 April 1990. Poland also signed the 1997 Protocol to Amend the Vienna Convention on 3 October 1997.
- Poland acceded to the 1988 Joint Protocol relating to the Application of the Vienna Convention and the Paris Convention on 23 January 1990 and it entered into force in this country on 27 April 1992.

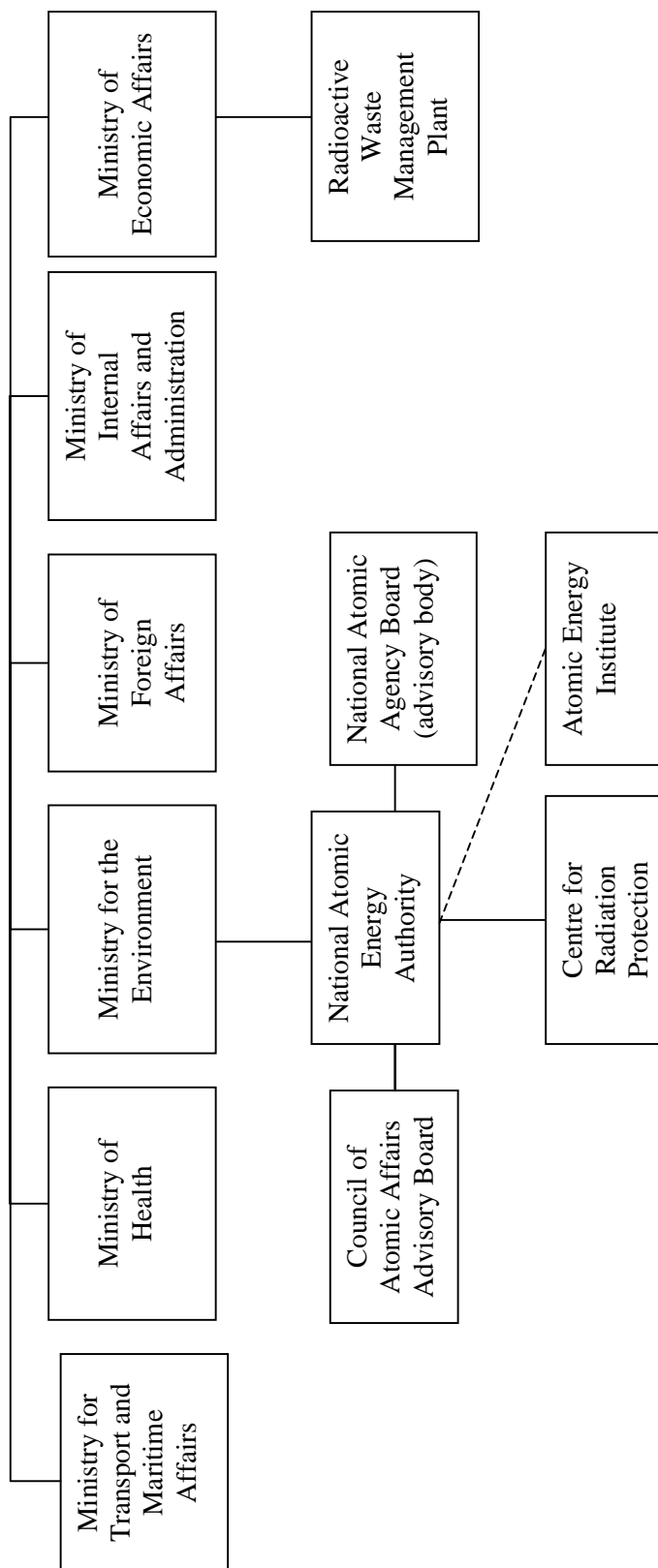
Other International Conventions

- Poland ratified the 1960 Convention concerning the Protection of Workers against Ionising Radiation on 23 December 1964 and it entered into force in this country on 23 December 1965.
- Poland ratified the 1963 Treaty Banning Nuclear Weapons Tests in the Atmosphere, in Outer Space and under Water on 14 October 1963 and it entered into force in this country on the same date.
- Poland ratified the 1968 Treaty on the Non-Proliferation of Nuclear Weapons on 12 June 1969 and it entered into force in this country on 5 March 1970.
- Poland ratified the 1971 Treaty on the Prohibition of the Emplacement of Nuclear Weapons and other Weapons of Mass Destruction on the Sea-Bed and the Ocean Floor and in the Subsoil thereof on 15 November 1971 and it entered into force in this country on 18 May 1972.
- Poland ratified the 1972 Convention on the Prevention of Marine Pollution by Dumping of Wastes and other Matter on 23 January 1979.
- Poland ratified the 1979 Convention on the Physical Protection of Nuclear Material on 5 October 1983 and it entered into force in this country on 8 February 1987.
- Poland ratified the 1986 Convention on Early Notification of a Nuclear Accident on 24 March 1988 and it entered into force in this country on 24 April 1988.
- Poland ratified the 1986 Convention on Assistance in Case of a Nuclear Accident or Radiological Emergency on 24 March 1988 and it entered into force in this country on 24 April 1988.
- Poland ratified the 1994 Convention on Nuclear Safety on 14 June 1995 and it entered into force in this country on 24 October 1996.
- Poland ratified the 1996 Comprehensive Nuclear Test Ban Treaty on 25 May 1999.
- Poland ratified the 1997 Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management on 5 May 2000 and it entered into force in this country on 18 June 2001.

Membership in Nuclear Organisations

Poland is a member of the International Atomic Energy Agency (IAEA), the Nuclear Suppliers Group and the Zangger Committee. The Institute of Atomic Energy is a member of the World Association for Nuclear Operators (WANO).

POLAND
Competent Nuclear Authorities in field of Nuclear Energy



ROMANIA

Introduction

Romania has one nuclear power station at Cernavoda made up of one unit in operation and another one under construction. A plan to construct three additional units has been suspended. Unit 1, a CANDU-type reactor with a capacity of 706 MWe, was connected to the grid in 1996. It is now operated by the National Nuclear Power Company (*Societatea Nationala Nuclearelectrica S.A.* – hereinafter referred to as *Nuclearelectrica*). Cernavoda nuclear power station provided 10.4% of Romania's electricity in 2002. Unit 2 of the Cernavoda nuclear power station, a CANDU reactor with a capacity of 706 MWe, could be ready for commercial operation in 2006.

Romania possesses two research reactors: one in operation, the 14 MWe TRIGA-type Material Testing Reactor of the Pitesti Branch for Nuclear Research, and one which is shut down, the 2 MWe VVR-S type research reactor of the Bucharest-Magurele National Institute for Physics and Nuclear Engineering (IFIN).

Romania also has several radioactive waste management facilities. The storage facilities at the Cernavoda site include the Spent Fuel Interim Dry Storage and the Radioactive Waste Interim Storage. Final disposal of low-level radioactive waste takes place at the National Repository for Low and Medium Level Radioactive Waste at Baita Bihor, which is operated under the responsibility of the IFIN. Romania also operates radioactive waste treatment plants in Bucharest under the responsibility of the IFIN Waste Treatment Department and at Pitesti under the responsibility of the Nuclear Research Branch of Autonomous Regie for Nuclear Activities.

The National Uranium Company, under the authority of the Ministry of Economy and Commerce, is involved in prospect mining and the processing of uranium ore. It is responsible for the management of radioactive waste resulting from its activities.

Competent Nuclear Authorities

The National Commission for the Control of Nuclear Activities (*Comisia Nationala pentru Controlul Activitatilor Nucleare* – CNCAN) is a governmental organisation which acts as a regulatory body responsible for the safety of all nuclear activities in Romania. Established by Decree No. 29 of 8 January 1990, the Commission is under the co-ordination of the Prime Minister. CNCAN is financed exclusively through the revenue that it collects. CNCAN is headed by a President, appointed by the Prime Minister, who is assisted by an Advisory Committee and the Licensing Board.

The Commission is responsible for all issues of nuclear safety relating to the siting, construction, operation and decommissioning of nuclear installations in Romania. It is also responsible for quality assurance, radiation safety, safeguards, radioactive waste management, import and export of nuclear installations and nuclear materials, physical protection, on-site emergency preparedness and

early notification of all potentially affected States, as well as the IAEA, in the event of a nuclear accident or radiological emergency. In the discharge of its duties, the Commission:

- issues guidelines, regulations, technical documents, standards and instructions governing the safe operation of nuclear installations;
- approves draft legislative instruments with implications in the nuclear field;
- organises a State control system concerning the non-proliferation of nuclear weapons;
- reviews and assesses safety information submitted by licence applicants;
- issues, amends and revokes licences and approves on-site emergency preparedness plans;
- verifies compliance with regulations and procedures during the design, construction, commissioning and operation of nuclear installations;
- collaborates with the central authority for environmental protection and controls the activities developed by the National Environmental Radioactivity Surveillance Network;
- supervises the application of the provisions of international agreements in force on safeguards, physical protection, illicit trafficking, transport of nuclear and radioactive materials, radiation protection, quality assurance, safety of nuclear facilities and interventions in case of nuclear accident;
- establishes and co-ordinates the national system of accounting for and control of nuclear materials, radiation sources, nuclear and radiological facilities and the national registry of doses for exposed workers;
- pursues international co-operation in the nuclear field with bodies engaged in similar activities in other countries and with international organisations.

The Commission comprises four main divisions: Nuclear Safety Division, Division of the Surveillance of Cernavoda Nuclear Power Station, Division of Quality Assurance and Licensing and Division of Ionising Radiation Sources Applications. Three further sections are under the direct supervision of the President of CNCAN: Section of Safeguards, Physical Protection and Fuel Cycle, Section of Radiation Protection, Radioactive Waste, Transport and Radiological Emergencies and Section of European Integration and International Co-operation.

In 1999 the CNCAN set up the Emergency Notification Centre as the contact point with the IAEA regarding notification and assistance in the event of a nuclear emergency.

Other Governmental bodies have responsibilities in the nuclear field.

The Ministry of Administration and Interior through the General Division for Combating Organisational Crime and Anti-Drugs is responsible for:

- investigation of specific cases of illicit trafficking with nuclear or radioactive materials;
- supervision of the nuclear fuel transport and physical protection assurance.

The Governmental Commission for Defence against Disasters is headed by the Prime Minister and by a Technical Secretariat attached to the General Secretariat of the Government. Under the authority of this Governmental Commission, several subordinate commissions are responsible for emergency planning and preparedness for different types of events that qualify as disasters. Among them is the Central Commission for Nuclear Accidents and Falling of Cosmic Objects (CCANCO), which is led by the Minister of Administration and Interior and is responsible for off-site emergency preparedness.

A National Export Control Agency (ANCEX) was created by Governmental Decision No. 594/1992 of 23 September 1992, to oversee the import and export of sensitive goods and technology. ANCEX is responsible for deciding whether or not to authorise the import and export of sensitive nuclear products.

The Ministry of Health is responsible for regulating the use of radioactive materials for medical diagnosis and treatment. It authorises the introduction of products into the economic circuit, for utilisation or consumption by the general public, that were subject to irradiation or which contain radioactive materials. It also authorises the use of sealed or unsealed sources of ionising radiation and of pharmaceutical products containing radioactive materials.

The Ministry of Agriculture, Forests, Water and Environment is responsible for developing environmental protection legislation and for the environmental protection licensing process.

The Pressure Vessels Authority of the Ministry of Economy and Commerce is responsible for the licensing and control of pressure vessels, boilers and pressure installations.

The Autonomous Reggie for Nuclear Activities (*Regia Autonoma pentru Activitati Nucleare*), acting under the authority of the Ministry of Economy and Commerce, has two subsidiaries dealing with research activities: the Centre for Engineering and Technology of Nuclear Objectives and Pitesti Subsidiary for Nuclear Research.

The National Nuclear Power Company (*Nuclearelectrica*), under the authority of the Ministry of Economy and Commerce, owns the Nuclear Power Plant at Cernavoda. *Nuclearelectrica* has three subsidiaries: CNE-PROD at Cernavoda Unit 1 deals with nuclear power plant operation; CNE-INVEST at Cernavoda Units 2-5 deals with nuclear power plant development and FCN at the Pitesti Nuclear Fuel Plant deals with nuclear fuel manufacturing. *Nuclearelectrica* is fully State-owned.

The National Agency for Radioactive Waste (ANDRAD – *Agentia Nationala pentru Deseuri Radioactive*) was established by Governmental Ordinance No. 11/2003 on the Safe Management of Spent Nuclear Fuel and Radioactive Waste, including their Final Disposal. ANDRAD co-ordinates the process of safe management of spent nuclear fuel as well as radioactive waste that results from the operation of the nuclear power reactors and research reactors, decommissioning of the nuclear and radiological installations and the technical operations in industry, medicine, agriculture and other social and economic sectors, including final disposal.

The National Atomic Energy Agency (ANEA) was established by Governmental Decision No. 743 of 1 November 1994, as a general division of the former Ministry of Research and Technology (at present Ministry of Education, Research and Youth). Pursuant to Government Decision No. 974/1998, ANEA fulfils the following tasks related to the peaceful uses of atomic and nuclear processes: formulation and monitoring of Governmental strategy; policies and programmes for peaceful uses of atomic and nuclear processes; dissemination of technical and scientific information; and public information regarding the advantages and risks of nuclear applications.

The National Institute for Physics and Nuclear Engineering (IFIN), under the authority of the Ministry of Education, Research and Youth, conducts basic research in the nuclear field and development of nuclear techniques. Its Radioactive Waste Treatment Facility (STDR), Bucharest-Magurele, provides for the majority of Romania's institutional radioactive waste as well as radioactive waste from the research reactor.

The Nuclear Agency, established in accordance with Ordinance No. 7/2003 on the Use of Nuclear Energy Exclusively for Peaceful Purposes, is a specialised body of the central public administration, and possesses legal personality under the Prime Minister. Its main objective is to assist in creating policy in the nuclear field and to promote and monitor the nuclear activities in Romania.

Legislation in Force

Law on the Safe Conduct of Nuclear Activities¹

Law No. 111/1996 was initially published on 29 October 1996. Several amendments have been made to the Law, the latest being Law No. 193 of 13 May 2003, published in the Official Gazette (*Monitural Oficial*, Part I, No. 343) on 20 May 2003. The object of the Law, in general, is the safe conduct of nuclear activities for exclusively peaceful purposes so that they meet safety conditions set for the protection of professionally exposed personnel, the general population, the environment and property. Further, the Law aims to minimise the risks associated with nuclear activities through a regime of regulatory requirements and international conventions.

The 1996 Law, as amended, aims to establish a comprehensive legal framework for the regulation, licensing and control of activities involving the peaceful uses of nuclear energy. It applies to the design, construction, operation and decommissioning of nuclear installations and to production, supply and storage of nuclear fuels, radioactive materials and waste. These activities require a licence from the CNCAN in accordance with procedures which ensure nuclear safety, radiation protection, quality assurance, non-proliferation and physical protection. A licence may be partially suspended or revoked by CNCAN if:

- the licence-holder fails to comply with the provisions of the Law on the Safe Conduct of Nuclear Activities;
- new technical facts arise, affecting the validity of the licence;
- the licence-holder is no longer considered to be a valid legal entity.

Licensees must apply the measures required for nuclear safety and for protection of personnel, the general public and the environment. Medical checks of exposed personnel are carried out regularly, in accordance with measures laid down by the Ministry of Health.

Furthermore, the Law sets out the requirements for radioactive waste management: the waste producer bears responsibility for the management of his radioactive waste, for the financial and material arrangements covering the collection, transport, treatment, conditioning and disposal of waste arising from his activities and the decommissioning of his facilities.

1. The full text in English of this Law was reproduced in the Supplement to *Nuclear Law Bulletin* No. 59 (June 1997) and is available on the NEA Web site at: www.nea.fr/html/law/nlb/NLB-59-SUP.pdf.

Pursuant to the 1996 Law covers all activities contributing to the proliferation of nuclear weapons or other explosive devices and which represent a threat to national security are prohibited. This provision covers the manufacture, import, export and transport of nuclear weapons or explosive devices in Romanian territory.

The import of radioactive waste and nuclear spent fuel is forbidden, unless it follows directly from foreign processing of a previously authorised export of radioactive waste or nuclear spent fuel, and is based on the provisions of an international agreement or contract concluded with commercial partners registered abroad. Producers and importers of radionuclides with radiation sources for medical purpose must first apply for the appropriate type of approval licence from CNCAN. The application of the producer or importer shall include the licence granted by the Ministry of Health to use the radiation source for medical purposes.

Licensees must also keep a detailed account of the radioactive and nuclear materials for which they are responsible and take measures to guard against loss or theft to prevent any accidental release of radioactive emissions. In the event of an accidental release, they must inform CNCAN which, in turn, will inform neighbouring countries accordingly. Licensees must further limit and mitigate the consequences of any such possible release.

The Law as amended, stipulates that the operator is exclusively liable for damages resulting in personal injury or death, and damage to or loss of use of property, in accordance with Romania's international commitments.

CNCAN is the national authority competent to exercise the regulatory powers provided for under Law No. 111/1996. The latest amendments provided under Law No. 193/2003 serve to enhance the CNCAN's administrative capacity by providing for:

- the recognition of CNCAN personnel who develop activities in radiological areas as exposed workers (in accordance with the provisions of EC Directive 96/29/Euratom of 13 May 1996 laying down the basic safety standards for the protection of the health of workers and the general public against the dangers arising from ionising radiation);
- the establishment of technical support organisations for CNCAN including a forthcoming National Institute for Nuclear Safety;
- the authority of CNCAN inspectors to order the cessation of activities which pose an unauthorised risk to nuclear installations, and the power to close nuclear installations not complying with legal requirements;
- the complete financing of the CNCAN budget by tariffs and fees received for the authorisation and control of nuclear activities.

Other noteworthy amendments found in Law No. 193/2003 include:

- allowance for the transit of radioactive waste in Romania, transposing the provisions of Directive 92/3/ Euratom of 3 February 1992 on control of Radioactive Waste Shipments into national legislation by Order No. 183/2003;
- a definition of nuclear related terrorist acts and specific sentences for each act;

- criminal sanctions for the unauthorised decommissioning of nuclear installations and radioactive sources, and the unauthorised cessation of nuclear activities.

Law on Civil Liability for Nuclear Damage

This Law was adopted on 3 December 2001 and entered into force on 19 December 2002. It aims to regulate civil liability for the compensation of damage resulting from activities involving the utilisation of nuclear energy for peaceful purposes. Romania is a Party to the 1963 Vienna Convention on Civil Liability for Nuclear Damage and to the 1997 Protocol to amend this Convention.

This Law establishes the fundamental principles underlying the international nuclear liability regime – strict and exclusive liability of the nuclear operator for damage occurring in his nuclear installation or involving nuclear material being sent to or from that facility. Nuclear damage includes *inter alia*: loss of life, personal injury, loss of income and damage to property and/ or to the environment. The minimum amount of liability of the nuclear operator is the equivalent in Romanian currency of 300 million Special Drawing Rights (SDRs). Such liability can be reduced to SDRs 150 million where the difference is provided by the State from public funds. There is also a phasing-in provision providing for the possibility of limiting the operator's liability to SDRs 75 million for a ten-year period. The liability for low-risk installations and transport activities can be reduced to SDRs 30 million (in certain cases, SDRs 20 million) and SDRs 5 million respectively (however, there must be at least SDRs 25 million cover for the transport of nuclear fuel). Rights to claim compensation are extinguished where an action is not brought within 30 years in respect of loss of life and personal injury, or ten years for other nuclear damage. In all cases, an action must be brought within three years of the date upon which the person suffering damage had knowledge of the damage and the liable operator.

The Methodological Norms for the enforcement of Law on Civil Liability for Nuclear Damage came into force on 14 September 2003. These Norms contain provisions on the system of civil liability for nuclear damage, insurance requirements, and the obligations of the operators and authorities for control, surveillance and evaluation of nuclear damage.

Law on the Defence against Disasters

The Law on the Defence against Disasters, adopted in 1995, sets out the responsibilities of the central and local authorities in the event of emergencies, such as nuclear accidents. At the State level, the Governmental Commission for Defence Against Disasters, under the authority of the Governmental Commission on the Central Commission for Nuclear Accidents and Falling Cosmic Objects (CCANCOC) is responsible for: off-site emergency planning and preparedness in the event of a nuclear accident at licensed utilities; radiological emergencies resulting from other licensed nuclear activities and radiological emergencies resulting from transboundary effects.

CNCAN is responsible for on-site emergency planning and preparedness. In this respect, the Commission approves the response plan and procedure established by the public authorities and licensees, assists the State authorities to set out intervention procedures, and informs the public.

Other Relevant Legislation

Law for approving the Governmental Ordinance on the Use of Nuclear Energy Exclusively for Peaceful Purposes.

Law No. 321/2003 was published in the Official Gazette on 15 July 2003, for the purpose of approving and simultaneously amending Government Ordinance No. 7 on the Use of Nuclear Energy Exclusively for Peaceful Purposes. Ordinance No. 7 was adopted on 30 January 2003 and entered into force on 1 February 2003. Its objective, stated in Article 2, is the promotion and organisation of activities in the nuclear field.

An exhaustive list of activities pertaining to the nuclear field, and to which the Ordinance applies, are listed in Article 3. Such activities are deemed to be “activities of national interest” and therefore may only be carried out by economic entities licensed in accordance with the applicable legislation.

The Ordinance provides that for the harmonisation of nuclear policies and monitoring the implementation of the National Nuclear Plan, a Nuclear Agency will be set-up by reorganising the present National Agency for Atomic Energy. Nuclear Agency will draw up the National Strategy of Development in the nuclear field, the Plan of Action and the National Nuclear Plan following consultations with other ministries, central and local Government bodies, economic entities operating in the nuclear field and professional associations in the sector (Article 7).

The Law provides that nuclear activities shall be carried out in accordance with the National Nuclear Plan. Ordinance No. 7/2003 provides that the Nuclear Agency is a specialised body of the central public administration, under the authority of the Prime Minister and shall provide specialised technical assistance to the Romanian Government (Article 15).

Finally, the Ordinance provides that nuclear activities in Romania are to be financed from budgetary funds, generated by the production and service sectors in the nuclear field, assets provided by economic entities, whether state-owned, private or mixed, funds generated by participation in international projects and any other funds as provided by law.

This Ordinance repeals those provisions of Law No. 61/1974 with regard to nuclear activities carried out in Romania, and Law No. 6/1982 with regard to quality assurance for nuclear facilities and installations which were not already repealed by the 1996 Law on the Safe Conduct of Nuclear Activities.

Basic Norms of Radiological Safety

The President of the CNCAN issued Order No. 14 approving the Basic Norms of Radiological Safety on 24 January 2000. These Norms, which replace the 1975 Standards for Radiation Protection, incorporate into Romanian legislation the principles established in Council Directive 96/29/Euratom of 13 May 1996 laying down basic safety standards for the protection of the health of workers and the general public against the dangers arising from ionising radiation. The Norms also take into account the recommendations of the International Atomic Energy Agency, Safety Series No. 115/1996, and the International Commission on Radiological Protection (ICRP No. 60/1992).

The transposition of Council Directive 96/29/Euratom was completed through the adoption by the Minister of Health and Family of Order No. 944 of 28 December 2001, approving the Norms on Medical Surveillance of Occupational Exposed Workers to Ionising Radiation. A number of Orders have been adopted to further implement European legislation in the field of radiation protection: Order No. 366 of 22 September 2001, of the CNCAN President approving the Norms on Radiological Safety-Authorising Procedures; Order No. 1032/2002 of 20 December 2002, of the Minister of Health and Family on Completion of the Norms on Medical Surveillance of Occupational Exposed Workers; Order No. 180/2002 on 5 September 2002, of the CNCAN President approving the Norms on Individual Dosimetry and, Order No. 202/2002 on 15 October 2002, of the CNCAN President approving the Norms on Issuance of Exercising Permits of Nuclear Activities and Designation of Radiation Protection Qualified Experts.

Council Directive 97/43/Euratom on health protection of individuals against the dangers of ionising radiation in relation to medical exposure was transposed into Romanian national law by Order No. 79/2002 of 14 March 2002 of the CNCAN President and Order No. 285 of 19 April 2002 of the Ministry of Health and Family jointly approving the Norms on Radiation Protection of Individuals in Case of Medical Exposure to Ionising Radiation.

Regulation on the Operational Protection of Outside Workers Exposed to the Risk of Ionising Radiation during their Activities in Controlled Areas

This Regulation, which was adopted on 20 August 2001, transposes the Council Directive 90/641/Euratom of 4 December 1990 on the operational protection of outside workers exposed to the risk of ionising radiation during their activities in controlled areas. Pursuant to the Regulation, outside undertakings are required to comply with reporting requirements and to provide information, training and individual radiological monitoring documents issued by the CNCAN. They also establish a system of prior authorisation of outside undertakings by the CNCAN. Operators of controlled areas must ensure protection of outside workers. This Regulation was completed by Order No. 228/2002 of the CNCAN President approving the Radiological Safety Procedures for the Acceptance of the External Undertakings.

Norms on Physical Protection in the Nuclear Field

These Norms were approved by Order No. 382 of 24 October 2001 by the CNCAN President. The Norms include requirements on the design, implementation and maintenance of physical protection systems in order to ensure the safe possession, use and transport of protected materials as well as the safe operation of protected installations.

Norms on the Transport of Radioactive Materials

Order No. 373 issued on 3 October 2001 and No. 374 issued on 14 October 2001 by the President of the CNCAN approve the Fundamental Norms on Safety Transport of Radioactive Materials and the Norms on International Shipments of Radioactive Materials involving Romanian Territory, both of which are meant to transpose Council Regulation (Euratom) No. 1493/93 of 8 June 1993 on shipments of radioactive substances between Member States.

Order No. 183/2002 of 6 September 2002 of the President of the CNCAN seeks to transpose the Council Directive 92/3/Euratom, including also the standard document referred to in Commission Decision No. 93/552/Euratom.

Order No. 222/2002 of the President of the CNCAN approves the Norms on Transport of Radioactive Materials – Authorisation Procedures. These Norms establish the regulatory requirements for the transport of radioactive waste involving the Romanian territory.

Norms on Foodstuffs and Feeding Stuffs Contaminated by Radiation Following a Nuclear Accident or Radiological Emergency

Order No. 91 of 14 March 2002 of the CNCAN President, Order No. 856 of 23 November 2001 of the Minister of Health and Family and Order No. 112 of 12 March 2002 of the Minister of Agriculture, Food and Forests aim to transpose European legislation on the radioactive contamination of foodstuffs and feeding stuffs following a nuclear incident. The monitoring of imported agricultural products is performed by the sanitary veterinary laboratories network. Dairy products and some other products, which do not comply with maximum acceptance levels, are forbidden for import. Data regarding the samples analysed and the values of the radioactive contamination detected in agricultural products are reported to the Institute of Hygiene and Veterinary Public Health of Bucharest.

Norms on Foodstuffs and Food Ingredients Treated by Ionising Radiation

Order No. 90 issued on 14 March 2002 by the CNCAN President, Order No. 855 issued on 23 November 2001 by the Minister of Health and Family and Order No. 98 issued on 4 March 2002 by the Minister of Agriculture, Food and Forests aim to implement Directive 1999/2/EC on the approximation of the laws of the Member States concerning foods and food ingredients treated with ionising radiation and Directive 1999/3/EC on the establishment of a Community list of foods and food ingredients treated with ionising radiation.

Law for approving Ordinance on the Management of Spent Nuclear Fuel and Radioactive Waste, including Final Disposal

Law No. 320/2003 was published in the Official Gazette on 22 July 2003, and has the effect of simultaneously approving and modifying Government Ordinance No. 11 of 30 January 2003, which aims to regulate the management of spent fuel and radioactive waste in such a manner as to guarantee the safety of the public, environment and property and to respect the rights of future generations. It further aims to set-out provisions governing the financing of such management activities over the life cycle of nuclear installations. The Ordinance applies to waste and spent fuel resulting from both power and research reactors and from industrial, agricultural and medical activities, with the exception of naturally radioactive waste. It subscribes to the polluter pays principle, confirms the exclusive liability of the generator of radioactive waste and provides that management methods must not put peoples' health or the environment at risk. The most effective methods available that do not involve excessive costs should be employed.

Chapter II provides that licensees are responsible for the management and final disposal of spent nuclear fuel and radioactive waste for the entire lifetime of their nuclear installation, including decommissioning. Nation-wide co-ordination of such activities shall be ensured by compliance with the national strategies on decommissioning and spent fuel and radioactive waste management. A

National Agency for Radioactive Waste, under the authority of the Ministry of Economy and Commerce, supervises the nation-wide co-ordination of such activities (see *supra* under Competent Nuclear Authorities). Licensees are required to report annually to the Agency on the quantities and types of waste and fuel generated at their installations.

Order on the Accreditation of Bodies in the Nuclear Field

On 10 December 1999, the President of the CNCAN issued Order No. 219 Governing the Accreditation of Bodies in the Nuclear Field, which subsequently entered into force on 29 March 2000. This text was adopted pursuant to Government Ordinance No. 38 of 30 January 1998 on accreditation and Ordinance No. 39/1999 which states that the CNCAN is responsible for assessing and accrediting certification bodies and laboratories in the nuclear field. Order No. 219 provides that the following types of bodies will be accredited: testing laboratories, calibration laboratories, products certification bodies, quality assurance certification bodies and personnel certification bodies. These bodies provide the CNCAN with reports on specific issues related to the licensing of nuclear activities to help it in its task of determining whether or not a licence should be granted. It sets out the criteria that should be fulfilled by these bodies in order to be accredited.

Regulations on Import and Export of Nuclear Materials

The imports and export of nuclear materials are regulated by Governmental Decision No. 594/1992, amended by Governmental Decision No. 1020/1996, creating the National Export Control Agency. Order No. 2/1993, which was issued by the Minister of Industry and Trade in implementation of Governmental Decision No. 594/1992, lays down a licensing system for the import and export of radioactive materials and nuclear equipment other than equipment and products which can be used directly for the manufacture of nuclear explosive devices. Act No. 88/1992 introduces a provision in the Penal Code which prohibits any breach of the regulations on imports of wastes and residues.

Order No. 40/1991, issued jointly by the Ministers of Foreign Affairs, Defence, and Industry and Trade, provides for a system of control over the export of materials, chemical and biological substances.

International Conventions

Nuclear Third Party Liability

- Romania acceded to the 1963 Vienna Convention on Civil Liability for Nuclear Damage on 29 December 1992 and it entered into force in this country on 29 March 1993. Romania ratified the 1997 Protocol to Amend the Vienna Convention on 29 December 1998 and it entered into force in this country on 4 October 2003.
- Romania acceded to the 1988 Joint Protocol relating to the Application of the Vienna Convention and the Paris Convention on 29 December 1992 and it entered into force in this country on 23 March 1993.

- Romania ratified the 1997 Convention on Supplementary Compensation for Nuclear Damage on 2 March 1999.

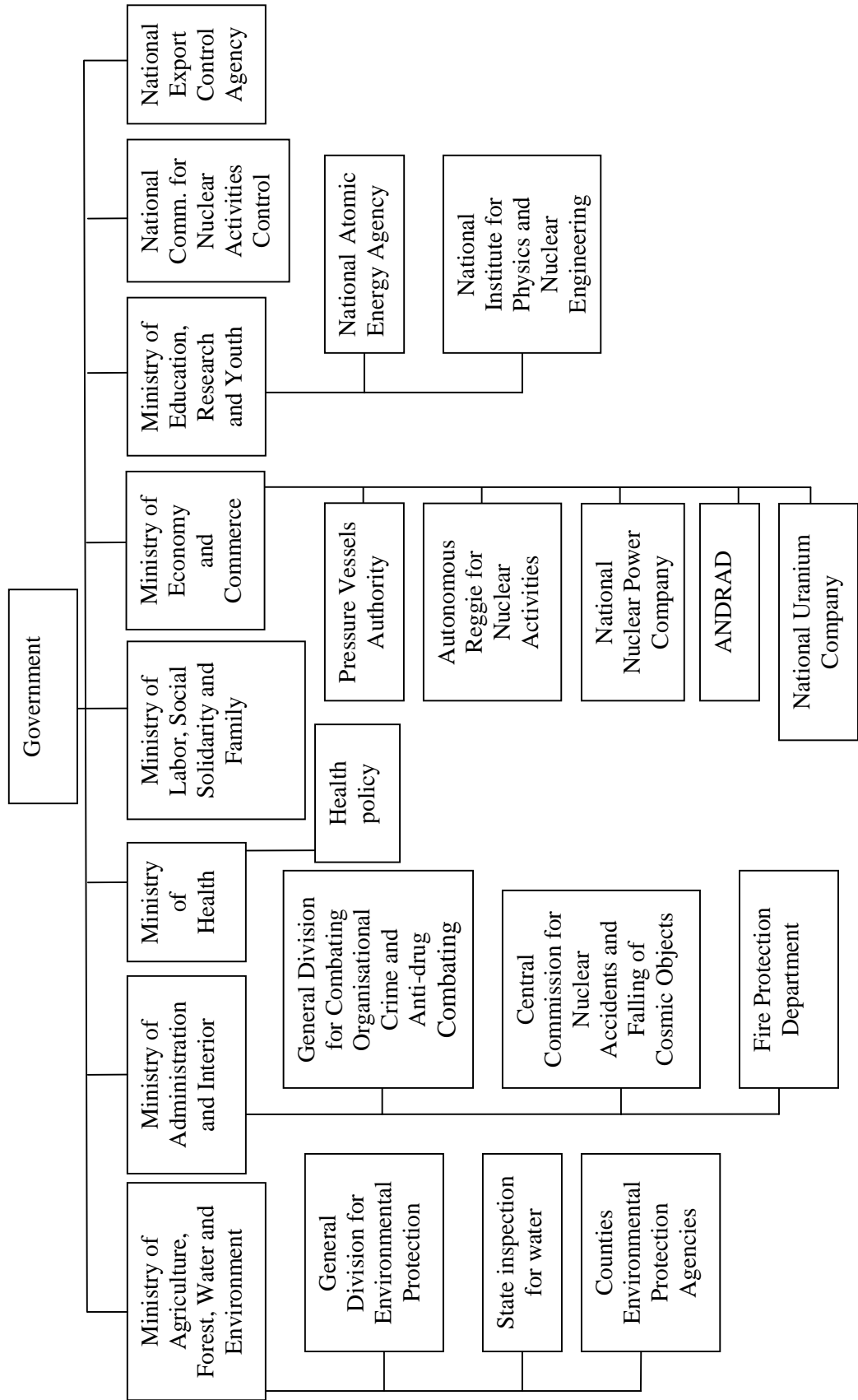
Other International Conventions

- Romania ratified the 1963 Treaty Banning Nuclear Weapons Tests in the Atmosphere, in Outer Space and under Water on 12 December 1963 and it entered into force in this country on 23 December 1963
- Romania ratified the 1968 Treaty on the Non-Proliferation of Nuclear Weapons on 4 February 1970 and it entered into force in this country on the same date.
- Romania ratified the 1971 Treaty on the Prohibition of the Emplacement of Nuclear Weapons and other Weapons of Mass Destruction on the Sea Bed and the Ocean Floor and in the Subsoil thereof on 10 July 1972 and it entered into force in this country on the same date.
- Romania ratified the 1979 Convention on the Physical Protection of Nuclear Material on 23 November 1993 and it entered into force in this country on 23 December 1993.
- Romania acceded to the 1986 Convention on Early Notification of a Nuclear Accident on 12 June 1990 on 12 June 1990 and it entered into force in this country on 13 July 1990.
- Romania acceded to the 1986 Convention on Assistance in Case of a Nuclear Accident or Radiological Emergency on 12 June 1990 and it entered into force in this country on 13 July 1990.
- Romania ratified the 1994 Convention on Nuclear Safety on 1 June 1995 and it entered into force in this country on 24 October 1996.
- Romania ratified the 1996 Comprehensive Nuclear Test Ban Treaty on 5 October 1999.
- Romania ratified the 1997 Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management on 6 September 1999 and it entered into force on 18 June 2001.

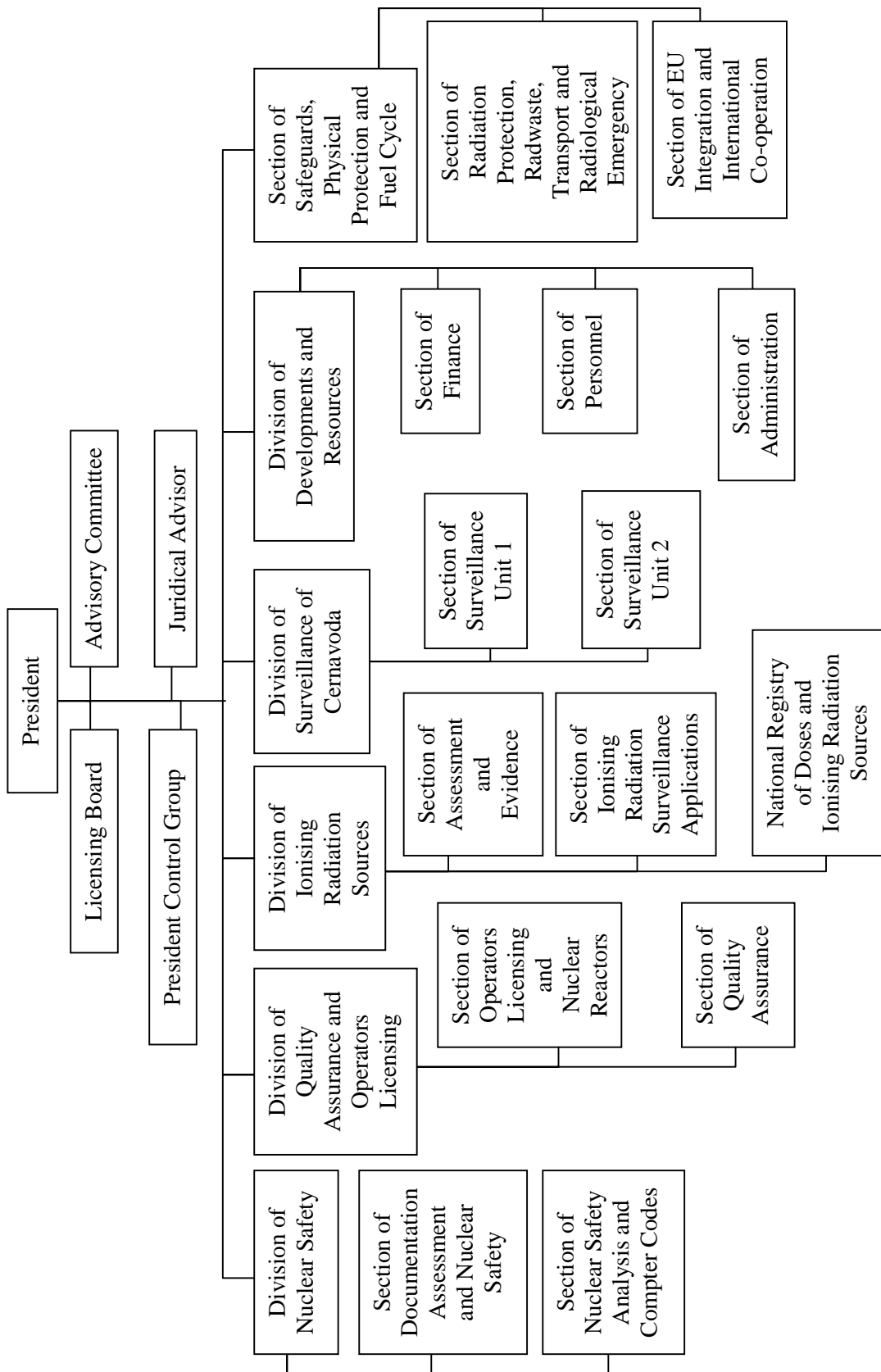
Membership in Nuclear Organisations

Romania is a member of the International Atomic Energy Agency (IAEA), and *Nuclearelectrica* is a member of the World Association of Nuclear Operators (WANO). Romania is a member of both the Nuclear Suppliers Group and the Zangger Committee.

ROMANIA
Competent Regulatory Authorities in the Field of Nuclear Energy



ROMANIA
National Commission for Nuclear Activities Control



RUSSIAN FEDERATION

Introduction

With an installed capacity of approximately 22 242 MWe, the Russian Federation is the largest producer of nuclear power-generated electricity of the four former Soviet Republics. Nuclear energy represented 16% of the total electricity production in the Russian Federation in 2002.

At present, there are 30 reactors in operation at nine sites in the Russian Federation and three more units are under construction. Of these reactors in operation, 14 are VVER design pressurised water reactors, 15 are light-water-cooled graphite reactors (LWGR), 11 of which are of RBMK design, and one is a fast breeder reactor. Approximately 65 nuclear research installations are also in operation.

In addition, the Russian Federation has three plutonium production reactors. One is located at Krasnoyarsk and has been operating since 1964. The two other reactors are located at Tomsk and have been operational since 1964 and 1965. They were originally used for the production of weapons-grade plutonium, but now essentially provide heat and electricity to the surrounding regions in Siberia.

There are two spent fuel-reprocessing plants in the Russian Federation: RT-1, operated by the Mayak enterprise at Chelyabinsk, which is used for spent nuclear fuel from VVER-440 and the fast breeder reactor and RT-2, a reprocessing plant for VVER-1000 spent fuel which is under construction. Until construction of the latter plant is completed, spent fuel is stored at the Special Storage Facility in Zheleznogorsk, near Krasnoyarsk. Spent fuel from RBMKs is not reprocessed, but stored on NPPs sites. The construction of a radioactive waste treatment facility at the Balakova nuclear power plant was completed in February 2003.

The Russian Federation has vast uranium resources and has one uranium ore processing facility, four uranium enrichment plants and two major fuel fabrication facilities; the Elektrostal complex near Moscow and one in Novosibirsk.

The Unified Electric Power System of Russia distributes and sells electricity in the Russian Federation. It owns the largest thermal and hydro plants, as well as all the high-voltage transmission lines of more than 300 kV in the Russian Federation. In addition, it buys the output of the 20 individual utility companies and a large proportion of *Rosenergoatom's* output (see *infra* under Competent Nuclear Authorities).

Competent Nuclear Authorities

Jurisdiction over nuclear matters lies primarily with the Ministry of Atomic Energy (*Minatom*) which has a regulatory role with the following objectives:

- to implement State policies in scientific and technical fields;

- to develop and implement measures to ensure the safe utilisation of nuclear energy;
- to develop appropriate standards and rules in the nuclear field;
- to design and implement radioactive waste treatment programmes.

Minatom operates a number of research institutes, among which are the Research and Development Institute of Power Engineering, the Institute of Physics and Electrical Engineering and the Institute for Reactor Research. The Kurchatov Russian Research Centre is the State scientific centre.

In order to provide centralised management of nuclear power plants and to ensure their safety, the Russian State Agency for the Generation of Electric and Thermal Power at Nuclear Power Plants (*Rosenergoatom*) was established by Presidential Decree No. 1055 on 7 September 1992. The Decree sets out the mandate of this body as a State-owned enterprise.

Rosenergoatom was reorganised by a Governmental Order of 8 September 2001 according to which 20 individual enterprises in the nuclear sector came under its control. These companies include nine nuclear power plants already in operation, six nuclear units under construction, three enterprises for repair and maintenance of NPPs, a firm specialised in NPP management training and consulting, and the Research and Development Institute of NPP Operation. Accordingly, *Rosenergoatom* is the sole nuclear utility in the Russian Federation to fulfil roles as both a nuclear operator and a nuclear generating company.

Rosenergoatom reports to *Minatom* even though it is, in principle, autonomous. *Rosenergoatom* is considered as the licensee for nuclear power plants as well as the liable operator for purposes of nuclear third party liability. In addition, *Rosenergoatom* is responsible for plant maintenance, technical support, operations planning, emergency planning, the dissemination of information, and staff training.

The Russian nuclear regulatory agency is the Russian Federal Agency for Nuclear and Radiation Safety (*Gosatomnadzor*). It was established as the State Committee of the same name by the Decree of 30 July 1991. *Gosatomnadzor* was transformed into a federal agency on 22 April 2002. The Agency is headed by a Chairman and several deputies all of whom are appointed by the Government. A College within the Agency, comprised of the Chairman, Deputies, and other Government nominated members recommended by the Chairman, examines and decides the most important issues affecting the activities of the Agency.

The Agency is responsible for implementing the Federal Regulation of Nuclear and Radiation Safety in the Use of Atomic Energy for Peaceful and Defence Purposes. It is also responsible for establishing conditions for the protection of workers in facilities using atomic energy, protection of the population and the surrounding environment from the harmful effects of ionising radiation and the prevention of uncontrolled dissemination and utilisation of nuclear materials.

The Agency is charged with the following tasks:

- to develop legislation on nuclear safety during the use of atomic energy;
- to issue licences to carry out nuclear-related activities and permits to workers involved in these activities;

- to monitor safety in the use of atomic energy, nuclear materials, and radioactive materials, and in the handling of nuclear and radioactive materials and radioactive waste;
- to conduct scientific research;
- to establish appropriate requirements for the prevention of any malicious acts on nuclear facilities, including terrorism;
- to implement international obligations on nuclear and radiation safety;
- to inform State agencies and the public about changes in nuclear and radiation safety in respect of nuclear installations, radiation sources and storage facilities.

To fulfil its functions the Agency has the right, *inter alia*:

- to conduct inspections and obtain the necessary documents and evidence for this purpose;
- to refuse, suspend or cancel a licence;
- to impose fines upon organisations engaging in atomic energy activities without a licence or in breach of licence conditions.

To achieve its purposes, the Agency established scientific-technical or scientific-consultative, methodological and expert councils. The Chairman establishes the status of the councils and their composition. The Scientific-technological Centre for Nuclear and Radiation Safety is under the direction of the Agency.

Pursuant to Presidential Decree No. 26 of 21 January 1997 on the Federal Organs of Executive Power Authorised to Implement the State Safety Regulations for the Use of Nuclear Energy, the Ministry of Health, the Federal Mining and Industrial Supervisory Committee (*Gosgortekhnadzor*) and the Ministry of Internal Affairs were also empowered to implement the State Regulations in their respective competence. Pursuant to the Presidential Decree of 2003, the Ministry of Civil Defence, Emergencies and Natural Disasters was empowered to implement the State Regulations on fire precautions. Other bodies which exercise jurisdiction in this field are the Ministry of Transport, the Ministry for Natural Resources, the State Committee for Standardisation (*Gosstandart*), and the Russian Federal Hydrometeorology and Environmental Monitoring Service. The Russian Institute for Nuclear Power Operations is responsible for improving plant operations.

A Special Commission for the Import of Spent Nuclear Fuel was established by a Decree of 10 July 2001, pursuant to the Law of 6 June 2001 on Allowing the Import of Spent Nuclear Fuel for Storage and Reprocessing. This Commission comprises 20 members (five each nominated by the President, the Duma, the Council of Federation of the Federal Assembly and the Government). The Special Commission is required to authorise all imports of foreign spent nuclear fuel into the Russian Federation, and to submit annual reports to the President and both houses of Parliament on such imports.

Legislation in Force

Law on the Use of Atomic Energy

The Federal Law on the Use of Atomic Energy¹ of 20 October 1995 is the general legislation governing all nuclear activities. It came into force on 21 November 1995. This Law establishes the legal basis and the principles for the regulation of the use of atomic energy, such as safeguarding health and life and protecting the environment and property. The main objectives of this Law are to create a legal framework to govern State control over the use of atomic energy and State regulation of nuclear safety. This Law also specifies the rights and obligations of citizens, government officials, enterprises, the federal executive authority and other organisations engaged in the field of nuclear energy use. Activities associated with the development, manufacture, testing and use of nuclear weapons and nuclear military installations do not fall within the scope of this Law. Such activities are subject to other federal laws.

Under the Law, persons using nuclear energy are required to comply with the following principles:

- to ensure the safe use of atomic energy and radiation protection of the population and the environment;
- to ensure free access to information on the use of atomic energy (unless such information constitutes a state secret);
- to ensure the participation of citizens, and corporate bodies, including commercial undertakings in the review of state policy and the drafting of legislation relating to the use of atomic energy; and
- to ensure compensation for damage caused by the effects of ionising radiation.

The Law establishes the legal regime, including licensing requirements, governing the siting, design, construction, operation and decommissioning of nuclear installations, radiation sources and storage facilities. It also regulates nuclear safety, physical protection, nuclear liability, transport, export and import of nuclear material and radioactive substances, and radioactive waste management.

The Law establishes the legal status, rights and obligations of organisations engaged in nuclear activities, including operating organisations. Such organisations are responsible for ensuring the safety of nuclear installations and the protection of the staff, the population and the environment in the event of an accident at a nuclear installation.

This legislation also contains provisions governing nuclear liability. Liability for damage caused by the use of nuclear energy lies with the operator of the installation, radiation source or storage centre. The operator is strictly liable for damage caused, irrespective of fault. The maximum limit of liability for loss or damage caused by the effects of radiation for a single incident may not exceed the amount of liability determined by international agreements to which the Russian Federation is a Party. In this regard, it should be noted that the Russian Federation signed the Vienna Convention on 8 May 1996, but has not yet ratified it. Furthermore, the Law stipulates that the operator is obliged to

1. The full text in English of this Law was reproduced in the Supplement to *Nuclear Law Bulletin* No. 57 (June 1996) and is available on the NEA Web site at: www.nea.fr/html/law/nlb/NLB-57-SUP.pdf.

obtain financial security covering the amount of liability as established by national legislation. Finally, if the operator's financial security is insufficient to cover the damage for which it is liable, the Russian Government is to make available funds to cover such damage. No time limit exists for compensation of loss and damage caused by radiation exposure to the health and life of citizens. The time limit for compensation claims of loss and damage to property or the environment caused by radiation exposure is set at three years from the day when the person was aware or should have been aware of the damage.

As regards the insurance of nuclear risks, several Russian insurance companies established a Nuclear Insurance Pool in 1997.

Law on Radiation Safety of the Population

The Federal Law on Radiation Safety of the Population was enacted on 9 January 1996 and entered into force on 28 January 1997. This Law, which complements the Federal Law on the Use of Atomic Energy, sets forth the basic principles governing radiation protection of the public, defines the rights and obligations of State agencies, legal entities and private individuals, and provides for the regulation of radiation safety by the State and by government authorities. Further, it defines the procedure for supervising and controlling radiation safety, thus strengthening the international regime for the safe use of nuclear energy.

The legislation confirms that human health and environmental protection take priority over all other considerations in the utilisation of nuclear energy, radioactive substances and other sources of ionising radiation. It sets forth the three essential principles of radiation safety – dose limitation, justification and optimisation – and establishes a mechanism for their implementation.

Laws allowing the Import of Spent Nuclear Fuel for Storage and Reprocessing

On 6 June 2001 the Duma adopted three Laws allowing the import of spent nuclear fuel for storage and reprocessing. These Laws entered into force on 13 July 2001.

The first Law amends Section 50 of the Law No. 2060-1 on Environmental Protection of 19 December 1991, which prohibited the import of spent fuel and radioactive waste except from Russian-made reactors. It states that the import of spent fuel assemblies from foreign countries to the Russian Federation for storage and/or reprocessing is allowed. Such imports are subject to governmental authorisation (see *supra* under Competent Nuclear Authorities) and to the provisions of international treaties to which the Russian Federation is a Party. The principles of non-proliferation, environmental protection and economic interest of the project shall also be taken into account.

The second Law introduces amendments and additions to the Law on the Use of Atomic Energy. It defines the terms “fuel assembly” and “spent fuel assembly” and states that their export and import will be governed by the terms of civil contracts.

Finally, the Law on Special Ecological Programmes for the Rehabilitation of Radioactively Contaminated Areas establishes the legal framework governing such programmes. The Special Ecological Programmes aim to ensure radiation protection of the public, general decrease of the risk posed by radiation and improvement of the ecological situation in radioactively contaminated areas. Measures of rehabilitation of such areas shall be implemented and radioactive materials taken out of operation shall be disposed of. These programmes shall be financed from income generated by foreign

trade transactions involving spent nuclear fuel assemblies. The Government shall approve such foreign trade transactions and 75% of the income generated shall be used to finance special ecological programmes. The Government shall prescribe the maximum number of spent fuel assemblies which may be imported per year into the Russian Federation, upon agreement with the authorities on the territory of which the spent fuel reprocessing installation is located.

Laws on Indemnification of Nuclear Damage

The Russian Federation has adopted legislation concerning the protection and indemnification of Russian citizens who were victims of the Chernobyl accident or other radiation accidents. In particular the following are relevant:

- the Act of 18 June 1992, as amended, on the social protection of citizens exposed to radiation as a result of the disaster at the Chernobyl nuclear power plant;
- the Act of 10 January 2002 on the social guarantees to citizens exposed to radiation as a result of nuclear testing at the Semipalatinsk Test Range; and
- the Act of 26 November 1998 on the social protection of citizens exposed to radiation as a result of the accident at the Mayak production centre and radioactive waste discharges into the Techa River in 1957.

These Laws define the legal status of victims and establish the procedure for their indemnification. They are complemented by regulations, decrees and other texts, all of which aim to provide the highest level of social protection possible.

Law on Technical Regulations

This Law was adopted by the Duma on 15 December 2002 and promulgated by the President on 27 December 2002. It entered into force six months thereafter.

The adoption of this Law, which is part of a complete re-modelling of the regime of economic activities in the Russian Federation, aims to reorganise and unify procedures by which “technical regulations” are drafted, adopted and applied. The general objective of these Regulations is to protect public health and private and public property, to preserve the environment and to prevent acts which may cause damage to consumers (Article 6). The activities covered are those which pose a risk for the above-mentioned interests and including the safe use of nuclear energy and ionising radiation and the safety of irradiation activities (Article 7). These Regulations should not, however, interfere with the freedom necessary to pursue economic activities any more than is strictly necessary.

The Act distinguishes between general technical regulations and those which have a special character. Nuclear and ionising radiation safety are included amongst the former.

The Act regulates in detail the conditions pursuant to which these Regulations are drafted, adopted and controlled, and defines the objective of standardisation.

This new legislation will substantially affect the powers exercised in the field of regulation and control of nuclear activities by the Federal Agency for Nuclear and Radiation Safety (*Gosatomnadzor*). It will therefore require that *Gosatomnadzor* draft new technical Regulations in this

field, to conform to the provisions of the Act. The Act establishes a seven-year preparation period for new technical Regulations. In the meantime, technical control in the field of nuclear safety and radiation will continue to be exercised on the basis of the 1995 Act on the Use of Atomic Energy as amended, and the 1997 Act on the Radiation Safety of the Public (Article 46).

Other Relevant Legislation

Numerous legal instruments, including the following, have been enacted pursuant to the Law on the Use of Atomic Energy:

- Government Decree No. 233 of 1 March 1997 on the List of Medical Counter Indicators and their Functions, and the Conduct of Medical Assessments and Psycho-Physiological Examinations of Employees who Work at Facilities Using Atomic Energy. This Decree confirmed the list of medical counter indicators, their functions and corresponding conditions for medical examinations.
- Government Decree No. 240 of 3 March 1997 on the List of Employees who Work at Facilities Using Atomic Energy.
- Government Decree No. 264 of 7 March 1997 establishing the Rules for the Physical Protection of Nuclear Materials, Nuclear Facilities and Storage Facilities for Nuclear Materials. This Decree provides for organisational measures and technical interventions in order to protect nuclear materials.
- Government Decree No. 289 of 12 March 1997 on the Delimitation of Territories Adjacent to Dangerous Radiological and Nuclear Installations and Facilities, on the Mobilisation and Use of Centralised Resources to Finance Measures for the Social Protection of the Public Residing in Such Territories and for the Development of a Social Infrastructure for these Territories in accordance with the Federal Law on Financing of Particular Dangerous Radiological and Nuclear Installations and Facilities.
- Government Decree No. 306 of 14 March 1997 established the rules for the adoption of decisions on the siting and construction of nuclear installations, radiation sources and storage facilities.
- Government Decree No. 392 of 5 April 1997 approving the Statute of the Ministry of Atomic Energy (confirmed the role of the Ministry of Atomic Energy as regards the management of the utilisation of atomic energy).
- Government Decree No. 718 of 16 June 1997 on the Procedure for the Establishment of a Unified State System for Accounting and Control in Relation to the Exposure of Individuals to Doses of Radiation.
- Government Decree No. 761 of 20 June 1997 establishing Rules for the Training, Operation and Financing of Regional Emergency Divisions of Operating Organisations, which aims to deal with consequences of accidents occurring during the transport of nuclear material or radioactive substances.

- Government Decree No. 865 of 14 July 1997 on Licensing Procedures and Requirements for Activities in the Field of Nuclear Energy Use. These provisions provide that *Gosatomnadzor* is the body responsible for licensing such activities.
- Government Decree No. 1039 of 15 August 1997 sets out rules requiring the notification of both national executive bodies and local administrative agencies upon the launch of a spacecraft containing nuclear energy sources, and the provision of assistance to the public in case of accidental early return of such spacecraft to Earth.
- Presidential Decree No. 1012 of 2 July 1996 on Guarantees for the Safe and Sustainable Operation of the Nuclear Power Industry in the Russian Federation provides that the Government is to prepare procedures for the use of a special financing fund connected with the decommissioning of nuclear installations, radiation sources and storage facilities. This fund is further used to finance scientific research and experimental work aimed at providing and increasing the safety of these installations. This procedure was approved by the Governmental Decree No. 367 of 2 April 1997.

Regulations on Nuclear Safety and Radiation Protection

In the Russian Federation, the Federal safety standards and rules and regulations are essential to legislative regime on the safe use of nuclear energy. The most significant safety requirements and conditions for nuclear power plants are found in the Radiation Safety Standards (NRB-99), General Regulations on Ensuring Safety of Nuclear Power Plants (OPB-88/97). The Code of discipline for workers in fields of atomic energy use was established by Government Decree No. 744 of 10 July 1998.

A further Presidential Decree, No. 72 of 25 January 1995, deals with the Government's support for the restructuring of the nuclear industry in the town of Zheleznogorsk of the Krasnoyarsk Region. The Decree establishes a system of environmental control for the residential areas affected by radiation from the Krasnoyarsk nuclear power plant's activities. It was amended by Decree No. 389 of 20 April 1995, which aims to guarantee the protection of the environment and of public health against the effects of ionising radiation.

Decrees on Export and Import Controls

Governmental Decree No. 124 of 8 February 1996 provided a list of nuclear materials, equipment, special non-nuclear materials and related technologies subject to export control. This list was approved by Presidential Decree No. 202 of 14 February 1996. It aims to ensure compliance with domestic legislation and with the Russian Federation's international obligations on non-proliferation of nuclear weapons. However, Presidential Decree No. 312 on Control over the Export of Nuclear Materials, Equipment, and Technologies from the Russian Federation, issued by the President on 27 March 1992, remains in force. It provides for the control of exports of nuclear materials, equipment and technology and specifically prohibits their export to countries which are not Parties to the IAEA Safeguards System.

Government Decree No. 973 of 15 December 2000 establishes the procedure for exports and imports of Nuclear Materials, Equipment, Special Non-nuclear Materials and Related Technologies.

Government Decree No. 291 of 16 March 1996 on Approval of the Statute Governing the Procedure for the Export and Import of Radioactive Substances and Products Manufactured with such Substances defines the procedure for the import and export of radioactive substances, establishes the licensing and other regulatory requirements for such activities and designates the agencies with jurisdiction in this area.

Decrees on the System of Accounting and Control of Nuclear Material

In implementation of Presidential Decree No. 1923, the Government adopted Decree No. 34 on 13 January 1995 on Measures to establish a State System of Accounting for and Supervision of Nuclear Materials. Amongst other objectives, the Government singled out the improvement of the legal framework governing accounting and control of nuclear materials. Many of the tasks set out in this Decree have been entrusted to *Gosatomnadzor*, together with other agencies. This State system was established by Government Decree of 14 October 1996. The rules on the organisation of this system were set out in Government Decree No. 746 of 10 July 1998.

Regulations on Radioactive Waste

Government Decree No. 149 of 22 February 2000 establishes Russia's federal programme on nuclear and radioactive waste safety for the period 2000-2006.

Regulations on Non-Proliferation

The Russian Federation has adopted several legal instruments concerning non-proliferation, including:

- Government Regulation of 24 June 1996 on the Implementation of International Agreements for the Safe Storage and Transport of Nuclear Weapons, which aims to define the participation of the Russian Federation in international co-operation in this area;
- Government Decree No. 82 of 24 January 1998 on the Adoption by the Russian Federation of Guidelines on the Handling of Plutonium;
- Government Decree of 1 June 1998 on the Implementation by the Russian Federation of the Provisions of the Model Additional Protocol to the Safeguards Agreement between the Government and the IAEA;
- Government Decree No. 1007 of 4 September 1999, on Licensing the Use of Radioactive Materials for Works Involving the Use of Atomic Energy for Defence Purposes.

Regulations on Indemnification of Nuclear Damage

Article 1079 of the Civil Code, which entered into force on 26 January 1996, states that legal entities and physical persons whose activities involve an increased hazard to the general public,

including activities in the field of the use of atomic energy, shall compensate the damage caused by such activities.

On 11 December 1994, the Parliament adopted an Act on the Protection of the Population and Territories in Emergency Situations.

The Federal Law on Amendments to the Criminal Code with Regard to the Use of Atomic Energy was adopted on 9 February 1999.

The Federal Law on Environmental Protection adopted by the State Duma on 20 December 2001 and signed by the President on 10 January 2002.

Draft Legislation and Regulations

The Law on Radioactive Waste Management was adopted by the Parliament but remains unsigned by the President. It aims to establish a legal framework for the safe treatment, storage and disposal of radioactive waste, and to create a system of comprehensive environmental monitoring of regional storage facilities of spent fuel and waste disposal sites.

A draft Law on Civil Liability for Nuclear Damage and the Provision of Financial Security for such Liability is under discussion before Parliament. The draft Law takes into account current international law provisions, in particular those established in the 1963 Vienna Convention on Civil Liability for Nuclear Damage. It aims to guarantee full compensation for nuclear damage and establishes procedures to obtain such compensation. It provides for strict and exclusive liability to be channelled to the operator of a nuclear installation. The draft Law also confirms that the Russian Government will pay full compensation for nuclear damage in excess of this amount. There is no time limit for submitting claims in respect of personal injury, however the limit for property damage claims is set at ten years.

The Duma has approved the proposal to draft a new Law offering extra social benefits to residents near nuclear installations. It would require nuclear operators and owners of radioactive sources to carry liability insurance to pay for injuries to the public.

The Bill on Radiation Safety for the Moscow City Population would make officials personally liable for misinformation on events involving radiation and would direct Moscow citizens to use dosimeters. This draft legislation would establish the right to compensation from the owner of the radioactive source for damage to health caused by radiation.

International Conventions

Nuclear Third Party Liability

The Russian Federation signed the 1963 Vienna Convention on Civil Liability for Nuclear Damage on 8 May 1996 but has not yet ratified it.

Other International Conventions

On 21 December 1991, the Russian Federation declared that it would succeed to the conventions, agreements and other international legal instruments concluded by the Soviet Union in the nuclear field. These instruments are as follows:

- 1960 Convention concerning the Protection of Workers against Ionising Radiation, which was ratified by the Soviet Union on 22 September 1967 and entered into force in this country on 22 September 1968.
- 1963 Treaty Banning Nuclear Weapons Tests in the Atmosphere, in Outer Space and under Water, which was ratified by the Soviet Union on 10 October 1963 and entered into force in this country on the same date.
- 1968 Treaty on the Non-Proliferation of Nuclear Weapons, which was ratified by the Soviet Union on 5 March 1970 and entered into force in this country on the same date.
- 1971 Treaty on the Prohibition of the Emplacement of Nuclear Weapons and other Weapons of Mass Destruction on the Sea-Bed and the Ocean Floor and in the Subsoil thereof, which was ratified by the Soviet Union on 18 May 1972 and entered into force in this country on the same date.
- 1972 Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter which was ratified by the Soviet Union on 30 December 1975, and came into force on 29 January 1976.
- 1979 Convention on the Physical Protection of Nuclear Material, which was ratified by the Soviet Union on 25 May 1983 and entered into force in this country on 8 February 1987 (continued on 26 December 1991).
- 1986 Convention on Early Notification of a Nuclear Accident, which was ratified by the Soviet Union on 23 December 1986 and entered into force in this country on 24 January 1987 (continued on 26 December 1991).
- 1986 Convention on Assistance in Case of a Nuclear Accident or Radiological Emergency, which was ratified by the Soviet Union on 23 December 1986 and entered into force in this country on 26 February 1987 (continued on 26 December 1991).

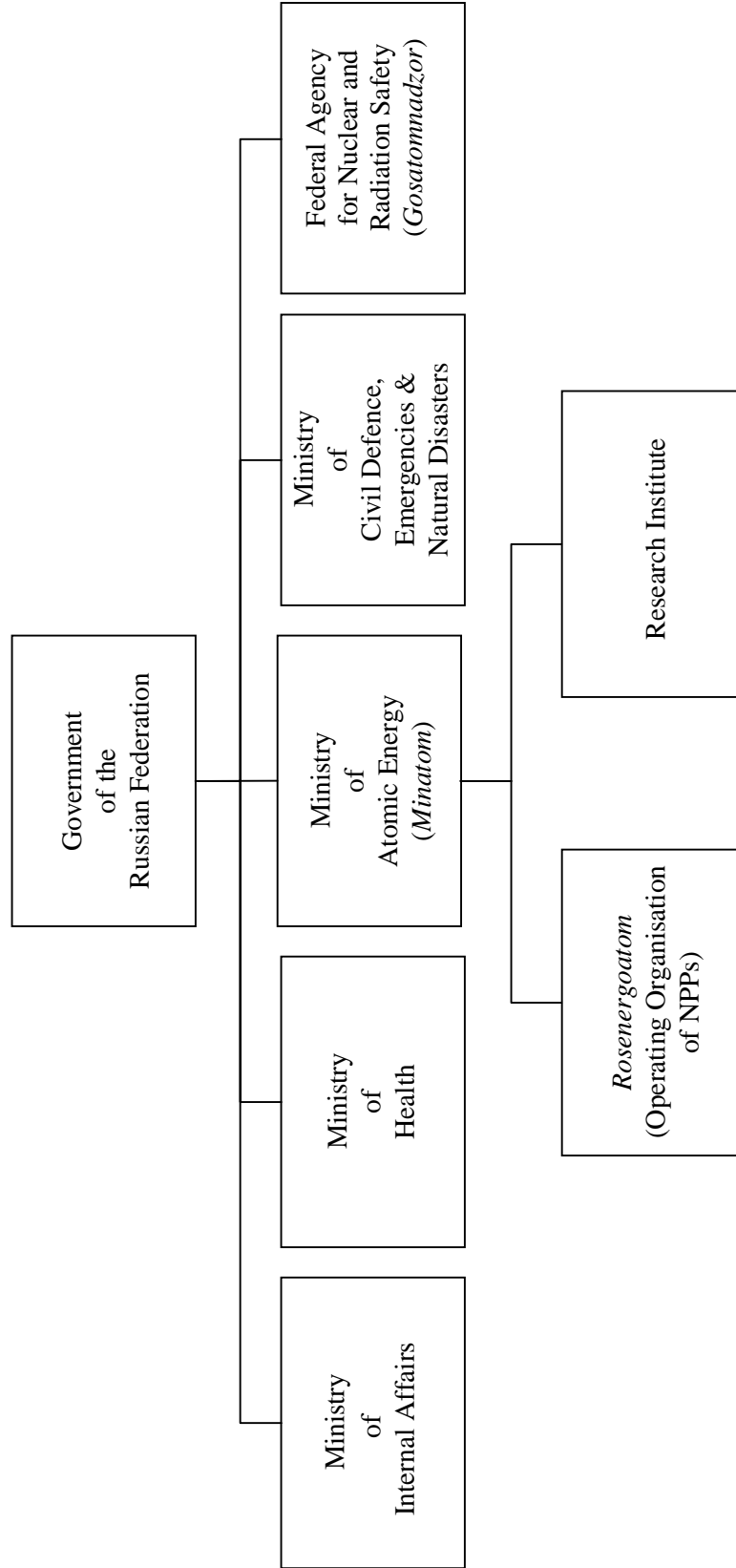
Furthermore, the Russian Federation:

- accepted on 12 July 1996 the 1994 Convention on Nuclear Safety, which entered into force in this country on 24 October 1996;
- ratified the 1996 Comprehensive Nuclear Test Ban Treaty on 30 June 2000; and
- signed on 27 January 1999 the 1997 Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management.

Membership in Nuclear Organisations

The Russian Federation is a member of the International Atomic Energy Agency (IAEA). *Rosenergoatom* is a member of the World Association of Nuclear Operators (WANO). The Russian Federation also joined the Nuclear Suppliers Group and the Zangger Committee.

RUSSIAN FEDERATION
Competent Authorities for Nuclear Energy



SLOVAK REPUBLIC

Introduction

The Slovak Republic has two nuclear power stations located at Bohunice and at Mochovce with a total capacity of 2 408 MWe. At the Bohunice station, there are four nuclear power units in operation and a fifth unit that is being decommissioned. The four operating units consist of two VVER 440 model V230 and two 440 model V213 with a total installed capacity of 1 632 MWe. In September 1999, the Government decided to shut down the two model V230 units at the Bohunice NPP in 2006 and 2008 respectively. At the Mochovce power plant two VVER 440 model V213 units with a capacity of 412 MWe were commissioned in 1998 and 2000 respectively. In 2002, nuclear energy represented 54.7% of total electricity generated in the Slovak Republic.

There are also three radioactive waste treatment facilities, an interim spent fuel storage facility and a radioactive waste disposal facility at Mochovce. A near-surface repository for low level and intermediate level waste was licensed and put into operation on a trial basis, and there are plans to construct a disposal facility for high-level waste and spent fuel in deep geological formations.

The Slovak public utility, *Slovenske Elektrarne*, is responsible for the production and distribution of electricity in the Slovak Republic, including electricity generated by the nuclear power plants. It produces about 90% of the country's electricity.

Competent Nuclear Authorities

The Nuclear Regulatory Authority (*Úrad Jadrového Dozoru – ÚJD*) of the Slovak Republic is the successor to the former Czechoslovak Atomic Energy Commission. It was established on 1 January 1993 by Act No. 2/1993, which defines its responsibilities and tasks and grants it autonomy in nuclear safety matters. This Act was replaced by the Act No. 575/2001 as amended (in force since 1 January 2002). The ÚJD acts as a State regulatory body reporting directly to the Government and is directed by a chairperson appointed by the Government.

Besides its chairperson, the ÚJD comprises a Secretariat and two departments, one for inspection activities, based at Trnava, and one for safety policy and international co-operation, located at the Bratislava ÚJD headquarters. There are also two inspection units located at the nuclear power plant sites. Lastly, in 1995, the ÚJD established an Information Centre in order to provide information on its activities to the public and the media.

The regulatory powers of the ÚJD cover the following areas:

- safety of nuclear installations;

- radioactive waste management, i.e. supervision of radioactive waste originating from nuclear installations and repositories for all types of radioactive waste;
- safeguards and control over nuclear and dual-use materials in accordance with the Treaty on the Non-Proliferation of Nuclear Weapons;
- quality assurance programmes;
- transportation of nuclear material;
- early notification of nuclear accidents;
- international agreements and obligations in the field of nuclear safety and nuclear materials.

The ÚJD is responsible, *inter alia*, for issuing and withdrawing licences and permits for reception, use, import, export and transport of nuclear materials, for radioactive waste and spent nuclear fuel management and for construction, operation and decommissioning of nuclear installations. The ÚJD also carries out state supervision, through nuclear safety inspectors, in the above areas within its jurisdiction.

A significant number of central bodies in the Slovak State administration are involved in various activities related to nuclear safety.

The Ministry of Economy is responsible for the promotion and development of the nuclear power programme and for preparing related legislation. It is also responsible for issuing licences, subject to the agreement of the ÚJD, for the export/import of nuclear material, nuclear-related or dual-use material, equipment and technology. Pursuant to Act No. 254/1994 as amended, which entered into force on 1 January 1995, and Decree No. 14/1995 as amended, a State Fund was established for the decommissioning of nuclear power plants and the management of spent fuel and radioactive waste arising from their decommissioning. The Fund is managed by the Ministry of Economy, which appoints the Fund's Director. The Ministry has also set up a Steering Committee of seven members who are experts in the fields of nuclear energy, health, environmental protection, economy and public administration, to provide advice on the distribution of funds. The Fund is financed by several means including contributions by nuclear power plant operators and state funding.

The Ministry of Health is responsible for the adoption and control of radiation protection measures inside nuclear installations as well as off-site, and for the supervision of radioactive waste originating from all sources other than nuclear installations until its treatment and transportation for final disposal.

The Ministry of the Environment has control over regional offices. These Regional Environmental Offices issue licences for the siting, construction, operation and decommissioning of nuclear facilities on the basis of approval by the ÚJD, the Ministry of Health and other organisations. They also operate the environmental radiation monitoring network. The Ministry of the Environment is also responsible for environmental impact assessments. Act No. 127/1994 as amended governs mandatory environmental impact assessments and authorises the Ministry to evaluate all proposals for the construction of or technical changes to nuclear installations, which might have an adverse effect on the environment. The Minister of the Environment also chairs the Government Commission for Radiological Emergencies.

The Ministry of the Interior is responsible for the supervision of fire protection and civil defence during radiological accidents and assistance in the event of a nuclear accident or radiological emergency.

The National Inspectorate of Labour is the agency that reports to the Ministry of Labour, Social Affairs and Family on matters of industrial safety.

Technical support is provided by several institutions. The most important of these is the Nuclear Power Plant Research Institute (*Vyskumny Ustav Jadrovych Elektrarni Trnava a.s.*), which is involved in the research and development of nuclear safety. The Institute also conducts training for the employees of the nuclear power plants at its training centre in Trnava. The training of personnel at the Mochovce plant is carried out with a full-scale simulator which is located on-site.

Legislation in Force

The legal framework for the regulation of nuclear safety in the Slovak Republic consists of a combination of acts adopted prior to the establishment of the Slovak Republic and new acts adopted since its independence.

Act on the Peaceful Uses of Nuclear Energy and its Implementing Regulations¹

Act No. 130 on the Peaceful Uses of Nuclear Energy was adopted by the Parliament of the Slovak Republic on 1 April 1998 (Published in Official Journal, 8 May 1998) and entered into force on 1 July 1998. It replaces Law No. 28/1984 on State Supervision of the Safety of Nuclear Installations which was adopted prior to the independence of the Slovak Republic and which governed the construction and operation of nuclear installations as well as the related licensing system, in order to take into account social and political changes, new environmental legislation, experience with nuclear energy use and international obligations which had arisen since its adoption.

Act No. 130/1998 sets out principles governing the use of nuclear energy, including the principle of justification. It furthermore states that nuclear energy must be used in compliance with international agreements concluded by the Slovak Republic in this field. It places particular emphasis on the safety of nuclear installations, radiation protection of the public and workers, physical protection and emergency preparedness.

The Act provides that the use of nuclear energy is subject to licensing and sets out, in a comprehensive manner, the application procedure and requirements for licensing.

A permit is also required for the acquisition and use of nuclear materials, including their import, export and transport. The Act sets out the obligation for all entities or persons involved with nuclear materials to keep accounting and operational records of such materials.

This legislation establishes requirements governing the construction, commissioning, operation and decommissioning of nuclear installations. It also contains provisions related to radioactive waste management and handling of spent fuel. In particular, it provides that the generator of such waste or

1. The full text of the Law was reproduced in the Supplement to *Nuclear Law Bulletin* No. 62 (December 1998) and is available at the NEA Web site at: www.nea.fr/html/law/nlb/Nlb-62/slvklaw4.pdf.

fuel is responsible for its management until its transfer to an appropriate depository and costs of such management from generation to disposal.

The Act sets out the responsibilities of the operator, as well as the conditions which must be fulfilled in order to ensure safety during all phases of operation of the nuclear installation. These include requirements for the qualification and training of nuclear installation personnel, quality assurance, the security of nuclear installations and emergency planning, both on- and off-site.

With regard to nuclear third party liability, the Act ensures the implementation of the obligations of the Slovak Republic under the Vienna Convention on Civil Liability for Nuclear Damage. The operator is liable for nuclear damage caused by a nuclear incident in its installation. Nuclear damage covers loss of life, personal injury and damage to property. Liability of the operator is limited to an amount of 2 billion Slovak crowns (SKK).² The operator is obliged to secure financial coverage up to this amount. A nuclear insurance pool was established.

Act on the Safety of the Health of the Population (as amended)

Act No. 272/1994 on the Safety of the Health of the Population as amended by Act Nos. 290/1996 and 470/2000 and Regulation No. 12/2001 lay down requirements for radiation protection based on the standards established by the International Commission for Radiological Protection and the IAEA in this field. This Act provides for rights and obligations of legal and natural persons in the area of radiation protection, and the powers of state authorities to license and regulate activities which expose citizens to radioactivity.

Act on the Management of Special Substances and their Control

Act No. 26/2002 on the Management of Special Substances and their Control defines the basic requirements for export/import of certain goods and technologies and specifies that the Ministry of Economy is the authority with jurisdiction to issue export/import licences for nuclear materials or other sensitive items subject to the approval of the ÚJD.

Other Relevant Legislation

In accordance with its mandate under the Act on the Peaceful Uses of Nuclear Energy, the ÚJD issued several regulations, as described below:

Decree on the Qualifications of Personnel of Nuclear Installations

Decree No. 187/1999 was adopted on 21 July 1999 and entered into force on 1 August 1999. It sets out the list of nuclear activities which may only be carried out by duly qualified personnel. It further establishes methods and procedures to verify the particular safety qualifications of personnel. The Decree also provides that the Nuclear Regulatory Authority shall issue a certificate to personnel for this purpose, which is valid for two years.

2. On 1 December 2003, SKK 2 billion corresponded to approximately EUR 79 million.

Decree on Requirements on Quality Systems of the Licensees

Previous Decree was amended by Decree No. 317/2002 issued by the Nuclear Regulatory Authority and adopted on 17 April 2002. This Decree describes the quality systems to be established by licence-holders for the design, construction, commissioning, operation, decommissioning of nuclear installations, as well as criteria to be fulfilled by licensees. In addition, the Decree establishes criteria for the categorisation of items important for nuclear safety.

Decree on Emergency Planning in the Event of a Nuclear Incident or Accident

Decree No. 245/1999 regulates on- and off-site emergency planning; emergency transport procedures; measures and procedures for the prevention, elimination and mitigation of the effects of accidents; public information; identification of hazardous areas in the vicinity of nuclear facilities; and frequency of emergency exercises. The nuclear and radiation emergency response system will be put into operation in the event of a release of radioactive materials into the environment from a nuclear facility, spent nuclear fuel or radioactive waste on national territory or abroad, or from nuclear materials during transportation. The Decree sets out in detail the content of the on-site emergency plan to be developed by the operator, as well as the off-site emergency plan and the emergency transport procedure. It differentiates between three emergency levels (alert, site area emergency and general emergency), setting out measures to be taken at each level. Measures include notification of authorities, public warnings, public protection measures such as recommendations to shelter indoors or evacuation and monitoring of the radiological situation.

Decree on the Safety Documentation of Nuclear Installations

Decree No. 318/2002, issued on 17 April 2002, entered into force on 1 July 2002. The Decree specifies the safety documentation to be submitted when applying for a licence for the construction, commissioning and the operation or extension of the lifetime of a nuclear installation.

Regulation on Events Occurring in Nuclear Installations

The Regulation No. 31/2000, which was adopted 20 January 2000 and entered into force 15 February 2000, classifies events occurring in nuclear installations into the following categories:

- failures: such as fire on the site of the nuclear installation, or loss or theft of nuclear materials, etc;
- incidents: covers events included in the above category where they cause damage of a non-serious nature to the nuclear installation, damage to the health of employees, contamination or irradiation of persons, leakage of radioactive substances on the premises and the site, etc;
- accidents: serious damage to the nuclear installation, serious health injury, leakage of radioactive substances into the environment, etc.

The Regulation also describes the method of notifying such events to the Nuclear Regulatory Authority, including the time period allowed to provide reports and the content of such reports,

methods of determining the cause of events through investigations and reporting to the public on incidents and accidents.

Decree Establishing the Maximum Limits for Quantities of Nuclear Material below which Nuclear Damage is not Expected to be Caused

Decree No. 30/1999 adopted 27 January 1999 and entered into force on 1 March 1999. Nuclear accidents caused by quantities of nuclear material lower than the thresholds established are therefore excluded from the financial cover for liability for nuclear damage.

Decree on Documentation on Nuclear Installations during Decommissioning

Decree No. 246/1999 was adopted on 13 September 1999 and entered into force on 1 October 1999. It provides details on the scope and contents of documentation which must be submitted by the operator to the Nuclear Regulatory Authority during the evaluation of the revised conceptual plan for the decommissioning of a nuclear installation, for the issue of a decommissioning permit and licences for each individual phase of decommissioning, the renewal of a licence or issue of a permit to change the purpose of a nuclear installation through its reclassification.

Decree on Requirements for the Physical Protection of Nuclear Facilities, Nuclear Materials and radioactive Waste

Decree No. 186/1999 was adopted on 13 July 1999 and entered into force on 1 August 1999. It set out requirements to ensure the physical protection of nuclear facilities, nuclear materials and radioactive waste including the issue of a permit to enter into protected areas. It also lays down criteria to categorise nuclear facilities, nuclear material and radioactive waste.

Decree Issuing the List of Special Materials and Equipment of the Nuclear Regulatory Authority

The Decree No. 29/1999 was adopted 27 January 1999. It sets out the list of special materials and equipment especially designed or produced for use in the manufacture and processing of nuclear material and the list of special dual-use materials and equipment.

Decree on Accounting and Control of Nuclear Materials

Decree No. 198/1999 which were adopted on 26 July 1999 and entered into force on 1 September 1999, define in detail how to maintain accounting and operating records, carry out inspections of nuclear materials and provide reports and notifications of nuclear materials.

Decree establishing Requirements for Transport of Radioactive Materials and Waste

Decree No. 284/1999 was adopted on 13 October 1999 and entered into force on 15 November 1999. It is based on the IAEA Safety Standards Series No. ST-1 – Regulations for the Safe Transport of Radioactive Material (1996 Edition) and sets out the conditions governing road, rail, water and air transport of radioactive material, radioactive waste from nuclear facilities and spent nuclear fuel. The Decree establishes the scope and content of the documentation required in order to obtain a permit for

the transport of radioactive material. In particular, it establishes prescriptions governing safety and physical protection during the transport of radioactive materials.

Regulation Establishing Requirements for the Management of Radioactive Waste and Spent Nuclear Fuel

The Regulation No. 190/2000 was adopted 26 April 2000 entered into force on 1 July 2000. The Regulation sets out the procedure and safety requirements to be followed by organisations and their employees who design, build, produce, commission, operate, repair and decommission nuclear installations during the handling, processing, storage or transport of radioactive waste or during the handling, storage and reprocessing of spent nuclear fuel.

Decree on Nuclear Safety Requirements for Nuclear Installations

Decree No. 167/2003 was adopted 5 March 2003 and entered into force 1 June 2003. The Decree was issued in accordance with Act No. 130/1998, which regulates nuclear safety requirements for nuclear installations for the duration of their operation – sitting, design, commissioning, operation and decommissioning.

Decree on Nuclear Safety Assessment

Decree No. 121/2003 was adopted 5 March 2003 and entered into force 1 June 2003. The Decree was issued in accordance with Article 20 Act 130/1998 Coll. This Decree provides intervals and scope complexity and systematic nuclear safety assessment for the duration of the nuclear installation's operation.

International Conventions

Nuclear Third Party Liability

- The Slovak Republic acceded to the 1963 Vienna Convention on Civil Liability for Nuclear Damage on 7 March 1995 and it entered into force in this country on 7 June 1995.
- The Slovak Republic acceded to the 1988 Joint Protocol relating to the Application of the Vienna Convention and the Paris Convention on 7 March 1995 and it entered into force in this country on 7 June 1995.

Other International Conventions

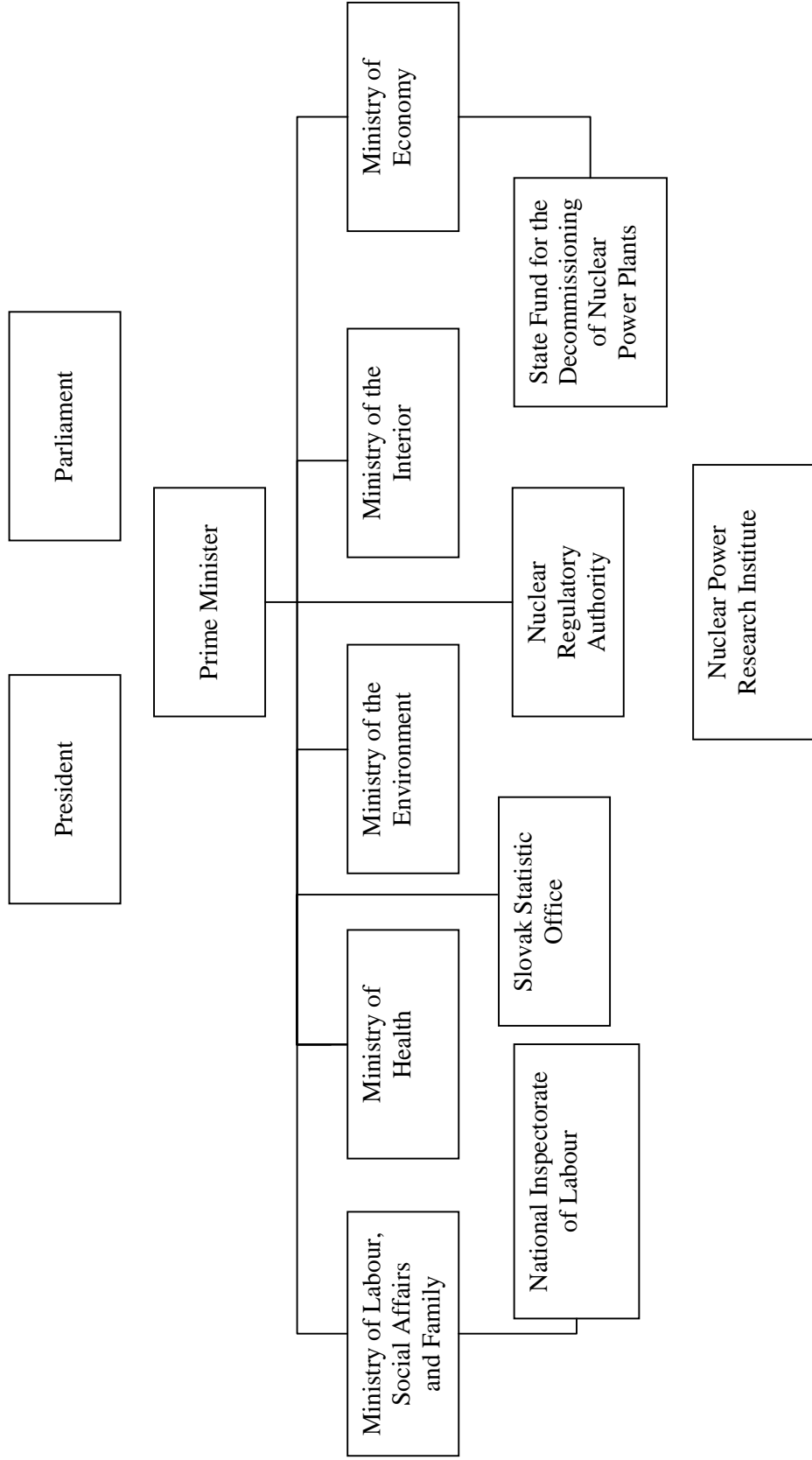
- The Slovak Republic succeeded to the 1960 Convention concerning the Protection of Workers against Ionising Radiation on 1 January 1992 and it entered into force in this country on 1 January 1993.

- The Slovak Republic succeeded to the 1963 Treaty Banning Nuclear Weapons Tests in the Atmosphere, in Outer Space and under Water on 1 January 1993 and it entered into force in this country on the same date.
- The Slovak Republic succeeded to the 1968 Treaty on the Non-Proliferation of Nuclear Weapons on 1 January 1993 and it entered into force in this country on the same date.
- The Slovak Republic succeeded to the 1971 Treaty on the Prohibition of the Emplacement of Nuclear Weapons and other Weapons of Mass Destruction on the Sea Bed and the Ocean Floor and in the Subsoil thereof on 8 October 1991 and it entered into force in this country on 1 January 1993
- The Slovak Republic succeeded to the 1979 Convention on the Physical Protection of Nuclear Material on 10 February 1993 with effect in this country from 1 January 1993.
- The Slovak Republic succeeded to the 1986 Convention on Early Notification of a Nuclear Accident on 10 February 1993 with effect in this country from 1 January 1993.
- The Slovak Republic succeeded to the 1986 Convention on Assistance in Case of a Nuclear Accident or Radiological Emergency on 10 February 1993 with effect in this country from 1 January 1993.
- The Slovak Republic ratified the 1994 Convention on Nuclear Safety on 7 March 1995 and it entered into force in this country on 24 October 1996.
- The Slovak Republic ratified the 1996 Comprehensive Nuclear Test Ban Treaty on 3 March 1998.
- The Slovak Republic ratified the 1997 Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management on 6 October 1998 and it entered into force on 18 June 2001.

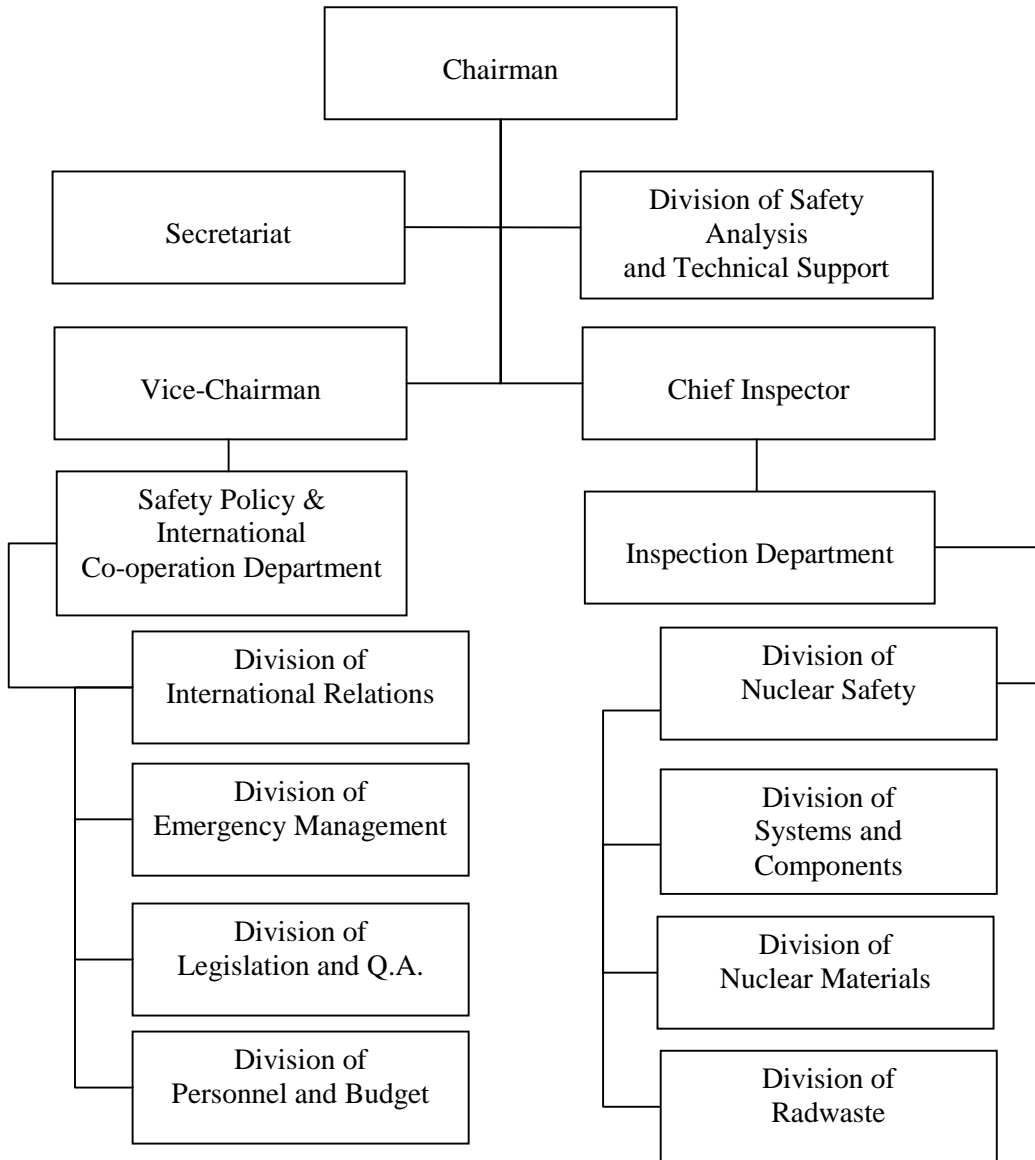
Membership in Nuclear Organisations

The Slovak Republic became a Member State of the OECD Nuclear Energy Agency in June 2002. The Slovak Republic is a member of the International Atomic Energy Agency (IAEA), and the Slovak utility is a member of the World Association of Nuclear Operators (WANO).

SLOVAK REPUBLIC
Competent Nuclear Authorities



SLOVAK REPUBLIC
Nuclear Regulatory Authority (ÚJD)



SLOVENIA

Introduction

Slovenia has one nuclear power plant in operation (a PWR-664 model of 632 MWe), at Krško in southeast Slovenia, which commenced operations in 1981. The plant is jointly owned by Slovenia and Croatia and supplies both countries with electricity. It generated 40.7% of the total electricity production in Slovenia in 2002. The installation is operated by the Slovenian utility *Nuklearna Elektrarna Krško*. On 19 December 2001, the Governments of Croatia and Slovenia signed a formal agreement with a view to resolving a long-standing dispute as to the ownership of the Krško nuclear power plant. This Agreement provides, *inter alia*, that the ownership of the plant is to be shared by the two countries on a 50/50 basis, 50% of output is to be delivered to Croatia and two separate decommissioning funds are to be maintained, in Croatia and Slovenia. The Agreement has been ratified by both countries and entered into force on 7 March 2003.

The Jozef Stefan Institute operates a Triga-type research reactor (250 kWh) at Podgorica near Ljubljana.

The *Zirovski Vrh* uranium mine and mill terminated operations in 1990 and are currently undergoing decommissioning and remediation works.

There are no waste disposal repositories. Slovenia does, however, have a storage facility at the Krško site for low and intermediate level radioactive waste from the nuclear power plant, and an interim storage facility at the Research Reactor Centre at Podgorica for low and intermediate level waste originating from all other producers of radioactive waste.

Competent Nuclear Authorities

In 1991, the Slovene Nuclear Safety Administration (SNSA) (*Uprava Republike Slovenije za Jedrsko Varnost*), originally established in 1987, was completely reorganised. Formerly an autonomous regulatory body directly answerable to the Government, it is now under the authority of the Ministry of the Environment, Spatial Planning and Energy. The SNSA is managed and represented by a Director, who is appointed for a period of five years by the Minister. The Minister represents the SNSA, however, at governmental and parliamentary level. The organisation of the SNSA is prepared by the Director and approved by the Minister.

The Slovenian Nuclear Safety Administration is divided into five divisions, as follows:

- the Division of Nuclear Safety;
- the Division of Radiation Safety;

- the Division of Nuclear and Radioactive Materials;
- the Division of Inspection Control; and
- the Division of Legal and International Co-operation Services.

The Division of Nuclear Safety is divided into two sections which reflect its main functions. The first deals with licences; the second produces and reviews safety analyses to support such licences.

The Division of Radiation Safety verifies radiation safety (with the exception of medical or veterinary applications) and is responsible for radiation dosimetry control and radiation monitoring. Within this Division there are two sections, one for radiation protection (within the licensing process) and one for monitoring.

The Division of Nuclear and Radioactive Materials deals with trade, transport and treatment of such materials. It shares responsibility in the field of physical protection of nuclear power plants and nuclear materials with the Ministry of the Interior. It also deals with the treatment, temporary storage and disposal of radioactive waste and participates in the selection of sites for nuclear facilities, especially those destined for radioactive waste. Finally, it is responsible for safeguards issues and illicit trafficking problems.

The Division of Inspection Control determines whether licence-holders are adhering to the safety requirements contained in the legislation, the regulations and in their licence. Inspections may be done one at a time, or may form part of an overall plan of inspections. To increase their efficiency, inspections may be unannounced. Regular inspections are carried out at Krško NPP on a weekly basis.

The Division of Legal and International Co-operation Services is involved with licensing procedures and the preparation of legislation on nuclear and radiation safety and on nuclear third party liability. This Division also co-ordinates co-operation with international organisations and foreign regulatory authorities in the fields of nuclear and radiation safety.

Besides these five divisions, there are also three offices which are under the direct authority of the SNSA Director: the Quality Assurance/Quality Control Office, the Emergency Planning Office and the Informatics Services Office. There is also an expert commission attached to the SNSA. The Expert Commission for Operators' Exams organises examinations and recommends that the SNSA grant or extend licences to nuclear plant shift personnel.

A Regulation of June 2003 on the Organisation and Assignment of Ministerial Responsibilities defines the SNSA's scope of activity as follows:

The Slovenian Nuclear Safety Administration performs specialised technical and developmental administrative tasks and tasks of inspection supervision related to:

- nuclear and radiation safety;
- radioactive waste management;
- the carrying out of practices involving radiation and the use of radiation sources, with the exception of medical or veterinary applications;

- protection of the public and the environment against ionising radiation;
- physical protection of nuclear installations and materials;
- non-proliferation of nuclear materials and safeguards;
- import, export and transit of nuclear and radioactive materials and of radioactive waste;
- radiation monitoring; and
- liability for nuclear damage.

Pursuant to the 2002 Act on Protection against Ionising Radiation and Nuclear Safety, the Minister of the Environment, Spatial Planning and Energy established the Expert Council on Nuclear and Radiation Safety, which replaces the former Nuclear Safety Expert Commission (previously attached to the SNSA). The Council consists of five experts appointed by the Minister upon a proposal of the SNSA Director. The Council fulfils an advisory role to the SNSA and the Ministry with regard to various issues including the annual report of the SNSA, important licences issued to nuclear and radiation facilities and draft laws and regulations.

On 27 February 2003, the Radiation Safety Administration was established as a regulatory body within the Ministry of Health. Pursuant to the Regulation adopted by the Government on 12 June 2003 on the Organisation and Assignment of Ministerial Responsibilities, the Radiation Safety Administration performs specialised technical and developmental administrative tasks and tasks of inspection supervision related to practices involving radiation or the use of radiation sources in medical and veterinary applications; the protection of the population against ionising radiation; systematic monitoring of living and working conditions in relation to exposure from natural radiation sources; monitoring of radioactive contamination of foodstuffs and drinking water; restriction, diminution and prevention of damage to health resulting from non-ionising radiation; and control of the qualifications and competence of radiation protection experts.

Administrative and professional duties relating to the protection against natural and other disasters are performed by the Administration for Civil Protection and Disaster Relief of the Republic of Slovenia (ACPDR). Its fields of activity include risk assessment and national emergency plans, organisation and equipment of national emergency forces for protection, rescue, disaster management, organisation and implementation of a unified national system of monitoring, notification and warning and assessment of damage caused by disasters.

The National Notification Centre (NNC) is responsible for notification procedures in the event of any natural or other disaster, including radiological emergency, in accordance with the National Plan for Protection and Rescue in the Event of a Nuclear Accident at Krško NPP. The notification procedure depends of the level of the emergency, but in all cases the NNC is required to notify the SNSA and the ACPDR.

The Agency for Radioactive Waste Management (*Agencija za radioaktivne odpadke* – ARAO) was created in 1991 by the Slovenian Government. Its main objective is to manage the final disposal of all types of radioactive waste in the Republic of Slovenia. In order to reach this goal, the Agency is responsible for the preliminary stages of safe radioactive waste disposal; for preparing and organising the construction, operation and management of a facility for final disposal of radioactive waste; for research and development in the field of radioactive waste management; for data collection on radioactive waste producers, quantities and types; for the transport of radioactive waste to the

repository and for education. The Agency's mandate was extended by the Government in 1996 to include, *inter alia*, the management of a temporary storage facility for low and intermediate radioactive waste from small users (e.g. hospitals); the transfer of management of this facility from the Jozef Stefan Institute to the Agency was carried out in June 1999.

In order to provide insurance cover for third party liability and material damage risks for the operators of nuclear installations, the insurance companies of ex-Yugoslavia had established a Yugoslav Nuclear Insurance Pool in May 1977. This Pool was located in Zagreb, Croatia, and was registered at the end of 1979. When Slovenia and Croatia became independent, a decision was reached that the Slovenian and Croatian pools should co-insure the Krško NPP against nuclear, fire and other risks on a 50/50 basis. Third party liability cover is insured by the Slovenian Nuclear Pool only. The Slovenian Nuclear Insurance and Reinsurance Pool was established in March 1994 and includes all major Slovenian insurance companies. The Pool, which is located in Ljubljana, is based on the fundamental principles common to all nuclear pools.

The Fund for the Decommissioning of the Krško NPP was established pursuant to the Act on the Fund for Financing the Decommissioning of the Krško NPP and on Radioactive Waste Disposal from the Krško NPP of 1994. The Fund is an independent legal entity with its headquarters in Krško. It is mandated to collect contributions, invest them on the financial market and to ensure the rational use of financial resources.

Finally, the Jozef Stefan Institute has, since its foundation in 1949, engaged in research and development of radioactive materials and other sources of ionising radiation. It operates the research reactor Triga Mark II. The Milan Čopič Nuclear Training Centre (ICJT), which is part of this Institute, aims to promote knowledge on the use of nuclear energy.

Legislation in Force

Act on Protection Against Ionising Radiation and Nuclear Safety¹

The Act on Protection against Ionising Radiation and Nuclear Safety was adopted by the Parliament of the Republic of Slovenia on 11 July 2002 and entered into force on 1 October 2002. It repeals and replaces the Act on Radiation Protection and the Safe Use of Nuclear Energy adopted on 21 November 1984 and the Act on Protection against Ionising Radiation and Measures for the Safety of Nuclear Facilities and Equipment of 5 November 1980. Its primary objective, as defined in Section 1 of the Act, is "to regulate ionising radiation protection, with the aim of reducing the detrimental effects on health and reducing to the lowest possible level radioactive contamination of the environment due to ionising radiation resulting from the use of radiation sources, while at the same time enabling the development, production and use of radiation source and performing radiation practices".

The 2002 Act consists of 16 main chapters, which are further divided into sub-chapters:

- General provisions (scope, basic principles in the field of nuclear and radiation safety);

1. The full text of this Act in English is available on the NEA Web site at: www.nea.fr/html/law/nlb/index.html.

- Practices involving ionising radiation (the obligation to report an intention to carry out practices involving radiation or to use a radiation source, carrying out of practices involving radiation, the use of radiation sources);
- Protection of people against ionising radiation (justification, dose limits, protection of exposed workers, medical exposure);
- Radiation and nuclear safety (the classification of facilities, in terms of radiation and nuclear safety; use of land, construction and carrying out of construction and mining activities; trial and actual operation of radiation and nuclear facilities; radioactive contamination; radioactive waste and spent fuel management; import, export and transit of nuclear and radioactive substances and radioactive waste; intervention measures);
- Licensing (issue, renewal, modification, withdrawal or expiry of a licence);
- Physical protection of nuclear substances and nuclear facilities;
- Non-proliferation of nuclear weapons and safeguards;
- Monitoring and control;
- Emergency planning;
- Reports on protection against ionising radiation and on nuclear safety;
- Records containing information on radiation sources and practices involving radiation;
- Financing of protection against ionising radiation and of nuclear safety;
- Compensation for the limited use of land due to a nuclear facility;
- Administrative tasks and inspection;
- Penal provisions; and
- Transitional and final provisions.

Amongst the main achievements of the 2002 Act are, *inter alia*, a clear division of the costs of implementing the Act between the State and licence-holders; a clearer definition of the licensing procedure; and inclusion of basic principles in this field such as the primary responsibility of licence-holders, the principle of peaceful uses, the polluter-pays principle and the justification and optimisation principles. It also provides for the authorisation of qualified experts for radiation and nuclear safety. Furthermore, this legislation takes account of the existing body of EU law in the field of radiation and nuclear safety and of the international agreements to which Slovenia is a Party.

An Act amending the 2002 Act was adopted on 25 February 2003. It reflects the draft proposal for an EU Council Directive on the management of spent nuclear fuel and radioactive waste and provides that the Slovenian Government shall prepare an amendment of the National Programme for the Protection of the Environment as regards radioactive waste and spent fuel management by the end of 2004 and submit it to the Parliament for adoption. The site for the establishment of a low and

intermediate-level waste repository must be approved by 2008 and it is to be licensed for operation by 2013.

Act on Liability for Nuclear Damage

The Act on Liability for Nuclear Damage, adopted on 19 April 1978² contains the following provisions:

- The operator of a nuclear installation is strictly liable for damage caused by a nuclear incident in its nuclear installation.
- The operator is liable for nuclear damage caused by a nuclear incident occurring during the carriage of nuclear material from its nuclear installation or during storage incidental thereto, if the nuclear incident caused by the nuclear material occurs before the operator of another nuclear installation has assumed liability with regard to nuclear incidents.
- The operator's liability is excluded if damage is caused by a nuclear accident due to an aggression, a war or an act of armed conflict, or a nuclear incident directly due to an earthquake, floods, fire or any other grave natural disaster, upon proof that such damage could not have been anticipated or avoided. The operator is also exonerated from its liability for nuclear damage suffered by a person upon proof that such person caused the damage intentionally.
- The operator is required to take out and maintain insurance or other financial security covering its liability for nuclear damage (1980 Act on Insurance for Liability for Nuclear Damage).

Decree on Establishment of the Amount of the Operator's Limited Liability and the Corresponding Amount of Insurance for Nuclear Damage

This Governmental Decree No. 443-02/2001-1, which repeals and replaces a 1998 Decree on the same subject, was adopted on 19 December 2001 and entered into force on 1 January 2002. It aims to harmonise the domestic legislation with the Paris Convention on Third Party in the Field of Nuclear Energy, to which Slovenia is a Party.

Pursuant to this Decree, the operator of a nuclear installation is liable for nuclear damage up to the equivalent in Slovenian Tolars of 150 million Special Drawing Rights (SDR) and must subscribe insurance to cover his liability up to this amount. However, insurance for a nuclear research reactor whose thermal power is less than 10 kW is set at the equivalent in Tolars of SDR 5 Million and insurance for transport of nuclear materials is set at the equivalent in Tolars of SDR 20 million. Furthermore, should nuclear damage exceed the amount insured by the operator, the Republic of Slovenia will cover the difference up to the equivalent in Tolars of SDR 150 million.

2. The full text in English of this Act was reproduced in the Supplement to *Nuclear Law Bulletin* No. 23 (June 1979) and is available on the NEA Web site at: www.nea.fr/html/law/nlb/NLB-23-SUP.pdf.

Act on Transport of Dangerous Goods

The Act on Transport of Dangerous Goods, which was adopted on 16 September 1999 and entered into force on 1 January 2000, replaces the 1990 Act on the Transport of Dangerous Substances. It applies to the transport of nuclear and radioactive materials by road, rail, sea, inland waterway, and air. A permit is required to transport dangerous goods. The Act sets out obligations for all persons involved in such transport operation. The Act confirms the direct application of several international agreements, in particular the European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR) and the International Regulations concerning the Carriage of Dangerous Goods by Rail (RID).

Act on Export Control of Dual-Use Goods

This Act was adopted in March 2000 in order to enforce the export control of equipment, material and technology which may be used for the production of nuclear, chemical and biological weapons or missile technology ammunition and explosives. It entered into force on 7 May 2000. In particular, the Act provides that a licence, issued by the Ministry of Economic Relations and Development after consultation of various ministries, is required to export dual-use goods. This licence, which is issued for a renewable period of one year, may be modified or revoked.

In addition to the licensing procedure, the Act determines the obligations of exporters. The Ministry is required to keep a record of licences issued and export operations carried out, and to inspect the dual-use goods and the related documentation, while the customs authorities are responsible for monitoring the export of dual-use goods and assessing exporters' compliance with the terms of the licence. Finally, the Act provides for penalties in the event of breach of its provisions.

Governmental Decision setting the List of Dual-Use Goods the Export of Which is Subject to Licensing

On 18 May 2000, pursuant to the above-mentioned Act on Export Control of Dual-Use Goods, the Government issued a Decision setting out the list of dual-use goods, the export of which is subject to licensing. The new export control regime governing dual-use goods has taken into account the Nuclear Supplier Group measures for nuclear non-proliferation, as set out in IAEA document INFCIRC 254/Parts I and II, as well as the European Union regime for the control of exports of dual-use goods, established in Council Regulation (EC) No. 3381/94 of 19 December 1994.

Other Relevant Legislation

Several regulations issued pursuant to the 1984 Law on Radiation Protection and the Safe Use of Nuclear Energy are still in force, since the 2002 Act provides that regulations issued pursuant to the 1980 and 1984 Act shall continue to apply until new regulations are adopted under the 2002 Act. These regulations govern, *inter alia*:

- siting, construction and operation of nuclear power plants, including quality assurance requirements (Off. Gaz. No. 52/88);
- safety analysis reports (Off. Gaz. No. 68/88);

- operator licensing (Off. Gaz. No. 86/87);
- safeguards (Off. Gaz. No. 9/88);
- monitoring radioactivity in Slovenia and radioactive waste (Off. Gaz. No. 40/86);
- monitoring radioactivity in the area of nuclear power plants (Off. Gaz. No. 51/86);
- radioactive waste management (Off. Gaz. No. 40/86);
- trade in radioactive sources and nuclear materials (Off. Gaz. Nos. 40/86 and 45/89);
- occupational conditions for radiation workers (Off. Gaz. No. 40/86);
- dose limits to the public and to radiation workers (Off. Gaz. Nos. 31/89 and 63/89);
- imports and exports of specific goods (Off. Gaz. No. 75/95), amended in February 1999.

Draft Legislation and Regulations

The 1978 Act on Liability for Nuclear Damage is currently under revision. Pending its revision, a 2001 Decree raised the amount of operator's liability (see *supra* under Legislation in Force).

A large number of regulations implementing the 2002 Act are presently under preparation. The adoption of this secondary legislation shall finalise the implementation of EU directives into Slovenian legislation and shall replace the regulations issued on the basis of former acts.

International Conventions

Nuclear Third Party Liability

- Slovenia succeeded to the 1963 Vienna Convention on Civil Liability for Nuclear Damage on 7 July 1992 with effect in this country from 25 June 1991. Following a notification of termination of application of the Vienna Convention from the Republic of Slovenia, the Convention ceased to apply to Slovenia as of 12 November 2002.
- Slovenia acceded to the 1960 Convention on Third Party Liability in the Field of Nuclear Energy (Paris Convention) and it entered into force in this country on 16 October 2001.
- Slovenia acceded to the 1963 Convention Supplementary to the Paris Convention (Brussels Convention) on 5 March 2003 and it entered into force in this country on 5 June 2003.
- Slovenia acceded to the 1988 Joint Protocol relating to the Application of the Vienna Convention and the Paris Convention on 27 January 1995 and it entered into force in this country on 27 April 1995.

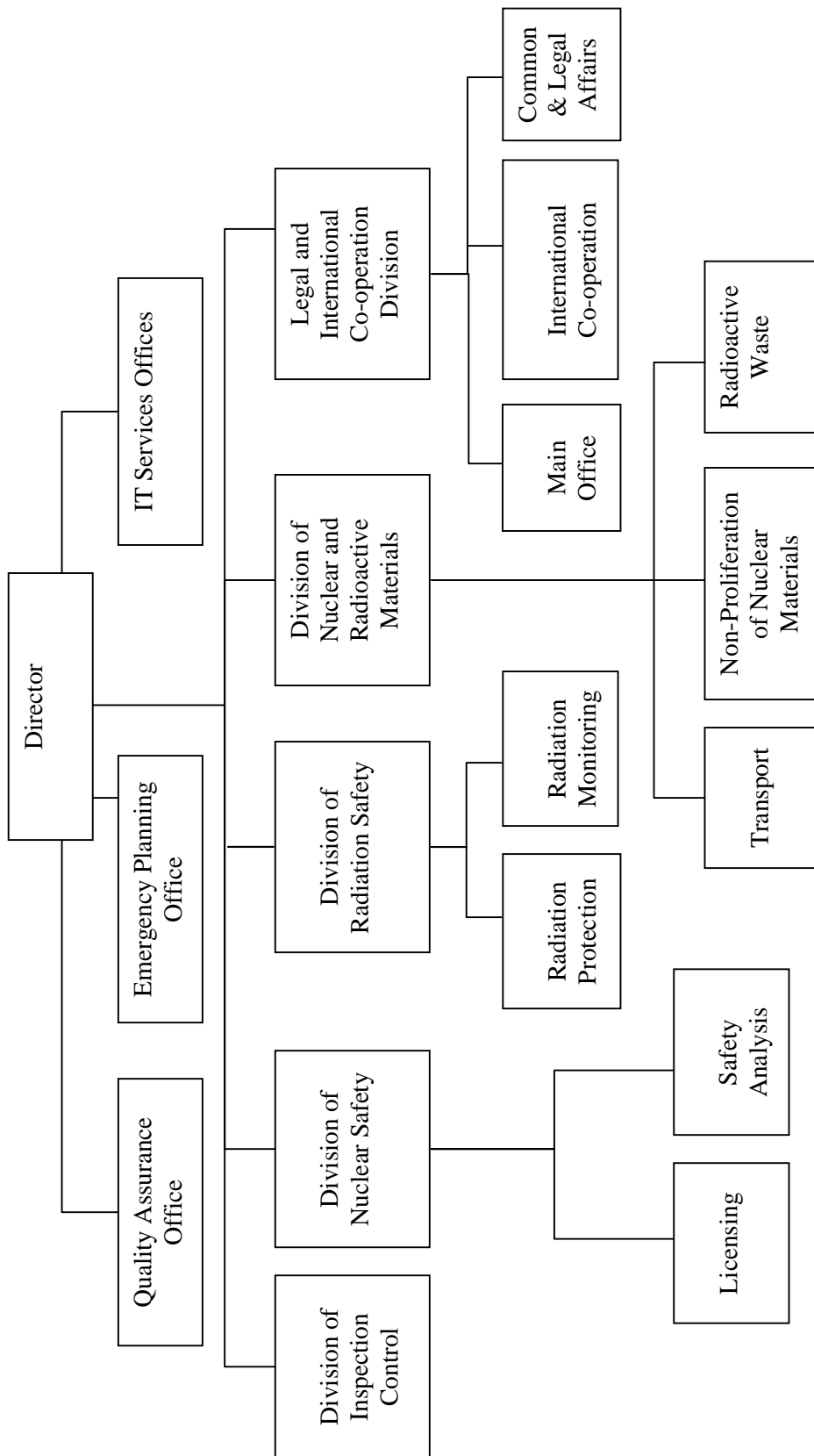
Other International Conventions

- Slovenia succeeded to the 1963 Treaty Banning Nuclear Weapons Tests in the Atmosphere, in Outer Space and under Water on 7 April 1992 and it entered into force in this country on the same date.
- Slovenia succeeded to the 1968 Treaty on the Non-Proliferation of Nuclear Weapons on 7 April 1992 and it entered into force in this country on the same date.
- Slovenia succeeded to the 1971 Treaty on the Prohibition of the Emplacement of Nuclear Weapons and other Weapons of Mass Destruction on the Sea Bed and the Ocean Floor and in the Subsoil thereof on 7 April 1992 and it entered into force in this country on the same date.
- Slovenia succeeded to the 1972 Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter on 20 May 1992 and it entered into force in this country on the same date.
- Slovenia succeeded to the 1979 Convention on Physical Protection of Nuclear Material, on 7 July 1992, with effect in this country from 25 June 1991.
- Slovenia succeeded to the 1986 Convention on Early Notification of a Nuclear Accident on 7 July 1992 with effect in this country from 25 June 1991.
- Slovenia succeeded to the 1986 Convention on Assistance in Case of a Nuclear Accident or Radiological Emergency on 7 July 1992 with effect in this country from 25 June 1991.
- Slovenia ratified the 1994 Nuclear Safety Convention on 20 November 1996 and it entered into force in this country on 18 February 1997.
- Slovenia ratified the 1996 Comprehensive Nuclear Test Ban Treaty on 31 August 1999.
- Slovenia ratified the 1997 Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management on 25 February 1999 and it entered into force in this country on 18 June 2001.

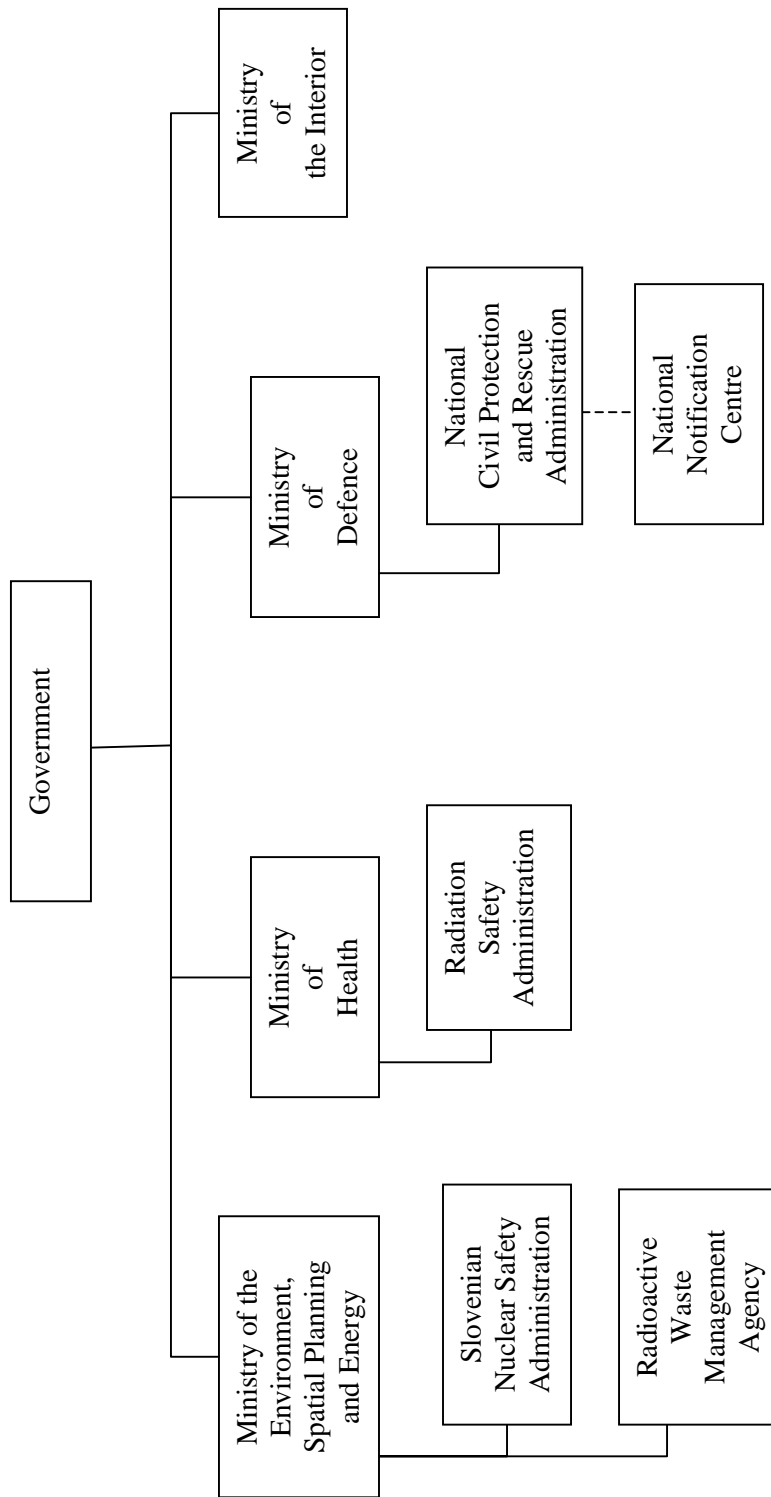
Membership in Nuclear Organisations

Slovenia is a member of the International Atomic Energy Agency (IAEA). Slovenia also joined the Nuclear Suppliers Group and the Zangger Committee. *Nuklearna Elektrarna Krško* is a member of the World Association of Nuclear Operators (WANO).

SLOVENIA
Slovenian Nuclear Safety Administration



SLOVENIA
Competent Authorities in the field of Nuclear Energy



UKRAINE

Introduction

There are 13 nuclear power reactors in operation at four sites in Ukraine with an installed capacity of 11 880 MWe. Nuclear energy represented 45.1% of the total national energy production in 2002. The power reactors are operated at the Khmelnytsky power plant (one VVER-1000), the Rivne nuclear power plant (two VVER-440/213 and VVER-1000), the South Ukraine plant (three VVER-1000) and at the Zaporizhzhya plant (six VVER-1000). Unit 3 of the Chernobyl nuclear power plant was shut down on 15 December 2000. Three units are currently under construction at the Khmelnytsky plant and one at the Rivne plant.

In addition, Ukraine has two research reactors: a VVR-M research reactor in Kiev operated by the Institute for Nuclear Research of the National Academy of Science, and an IR-100 in Sevastopol operated by the Institute for Nuclear Energy and Industry.

Ukraine currently stores some of its spent fuel at on-site storage facilities, while the remainder is sent to the Russian Federation for reprocessing and temporary storage before its eventual return to Ukraine.

Ukraine also has uranium ore mining and treatment facilities, as well as production facilities for metallic zirconium and hafnium.

Competent Nuclear Authorities

On 5 December 2000, the President of Ukraine signed Decree No. 1303 on State Regulation of Nuclear and Radiation Safety, which was complemented by a Presidential Order of March 2001. The Decree establishes the State Nuclear Regulatory Committee of Ukraine (SNRCU) as the central executive authority for the regulation of nuclear activities in Ukraine. This new Committee, which is under the supervision of the Cabinet of Ministers, is an amalgamation of the former State Nuclear Inspectorate and the Nuclear Regulatory Department of the Ministry of the Environment and Natural Resources. The SNRCU participates in the development and implementation of State policy in the area of the use of nuclear energy.

The Committee is empowered to establish criteria, requirements and conditions for the safe use of nuclear energy, to develop and promulgate safety rules and standards, to regulate the physical protection of nuclear installations and materials, radioactive waste and other ionising radiation sources, to issue permits and licences for conducting activities in the field of nuclear energy, and to monitor compliance with legislation governing nuclear and radiation safety. The SNRCU also co-ordinates central and local authorities involved in the State regulation of nuclear and radiation safety.

In October 1996, the President of Ukraine decided to establish a state-owned company called the National Nuclear Energy Generating Company (*Energoatom*), to take over, from the *Goskatom* (former Ministry of Energy), all of the assets and become the operating organisation of existing nuclear power plants (Resolution No. 1268 of the Cabinet of Ministers of 17 October 1996). Resolution No. 830 of 8 June 1998 of the Cabinet of Ministers appoints *Energoatom* as the operator of all nuclear reactors (with the exception of the Chernobyl nuclear power plant, see *infra* under the same section).

Energoatom is the producer of nuclear-generated electricity in Ukraine and is responsible for the management of radioactive waste generated by its facilities and for decommissioning, with the possibility of delegating its operational responsibilities to each individual nuclear power plant operator. *Energoatom* is managed by a President, vice-president and board of directors, all of whom are appointed by the Cabinet of Ministers.

Energoatom is the “operator” for the purpose of the nuclear liability regime under the 2001 Law on Civil Liability for Nuclear Damage and its Financial Security and the 1963 Vienna Convention on Civil Liability for Nuclear Damage.

The Ministry of Health Protection is responsible for establishing radiation protection regulations and standards, including those applicable to occupational exposures.

The Ministry of Internal Affairs is in charge of the physical protection of nuclear materials and installations.

Pursuant to the Presidential Decree of 26 July 1996, the Ministry responsible for addressing the consequences of the Chernobyl accident and the Ministry of Civil Defence merged to form the Ministry of Emergency Situations and Removal of the Consequences of the Chernobyl Accident. This Ministry is responsible for:

- state monitoring and control over technical safety, preparedness for action in emergency situations and implementation of preventive measures;
- organising and co-ordinating implementation of measures in the zone of evacuation and zones of compulsory resettlement of the population;
- assessing radiation conditions in the territories contaminated as a consequence of the Chernobyl accident, implementing radiation monitoring, management and co-ordination of work aimed at examining the radiation situation in these territories;
- organising and co-ordinating activities in the field of radioactive waste management.

The Ministry of Fuel and Energy, established by the Decree of 15 December 1999, replaces, *inter alia*, the Ministry of Energy and its Department on Nuclear Energy (formerly *Goskatom*) with regard to the management of radioactive waste generated by nuclear fuel cycle enterprises. The Ministry of Fuel and Energy is responsible for the regulation of nuclear energy and radiation safety. A new Department for Nuclear Energy has been established within this Ministry and is comprised of the Division of Nuclear Power Plants Management, the Division for Chernobyl Problems, the Division of the Nuclear Fuel Cycle and the Division of Nuclear Fuel, Radiation Safety and Radwaste.

Following the adoption of the Presidential Decree of 25 September 2000 concerning the planned shut-down of the Chernobyl nuclear power plant, the Cabinet of Ministers adopted Decree No. 399

establishing a state-owned specialised company called Chernobyl Nuclear Power Plant on 25 April 2001.

While the plant was previously a division of the National Nuclear Energy Generating Company (*Energoatom*), Chernobyl Nuclear Power Plant, which has inherited property and responsibilities from *Energoatom*, is now under the direct supervision of the Ukrainian President and reports to the Minister of Fuel and Energy, who appoints its Director.

The Chernobyl Nuclear Power Plant's main tasks are as follows:

- ensuring the safe decommissioning of the Chernobyl site's three nuclear units and other nuclear units;
- transforming the sarcophagus at the destroyed fourth unit into a ecologically safe system;
- managing the radioactive waste and spent fuel generated by the Chernobyl nuclear power plant; and
- participating in international decommissioning projects.

The NPP Operation Support Institute, founded in 1997, is entrusted with analysing the Ukrainian NPPs' operational experience, assessing safety of units in operation and under construction, and participating in the development of programmes to upgrade them. Furthermore, it acts as an expert organisation for scientific and technical support of NPP operation.

Legislation in Force

Law on the Use of Nuclear Energy and Radiation Safety

Law No. 40/95 on the Uses of Nuclear Energy and Radiation Safety¹ was adopted on 8 February 1995 and entered into force on 21 March 1995. On 3 December 1997 the Law was amended by the Law on the Introduction of Amendments to certain Legislative Acts of Ukraine in connection with the accession of Ukraine to the Vienna Convention on Civil Liability for Nuclear Damage. Law No. 40/95 lays down basic principles governing the peaceful uses of nuclear energy, including the protection of the public and the environment, and defines the rights and obligations of citizens in relation to the use of nuclear energy.

The Law applies to the following activities:

- construction, commissioning, operation and decommissioning of nuclear installations;
- management of nuclear materials and ionising radiation sources, in particular the mining of materials containing nuclear substances;
- accounting and control of nuclear materials and radiation sources;

1 . The full text in English of this Law was reproduced in the Supplement to *Nuclear Law Bulletin* No. 56 (December 1995) and is available on the NEA Web site at: www.nea.fr/html/law/nlb/NLB-56-SUP.pdf.

- physical protection of nuclear installations and materials; and
- co-operation with respect to Ukraine's international obligations in the nuclear field.

The Law provides for citizens' rights to information on the uses of nuclear energy and radiological safety, and for the dissemination of such information by the organisations and institutions concerned.

This Law's provisions on third party liability have been superseded by the 2001 Law on Civil Liability for Nuclear Damage.

With regard to insurance against nuclear liability risks, the Ukrainian insurers established a Nuclear Insurance Pool in 1996. It was registered at the Ministry of Justice in January 1997 in order to obtain legal status.

Law on the Licensing of Activities in the Field of Nuclear Energy

This Law,² which was signed by the President on 11 January 2000 and entered into force on the same date, defines the legal and organisational framework governing permitted activities in the field of nuclear energy and provides for certain exemptions from the general provisions established by the Law on Business Undertakings.

The Law aims to ensure that operators of nuclear facilities, users of radiation sources and managers of radioactive waste management installations comply with internationally accepted safety levels. It lists those activities in the nuclear energy field which are subject to licensing: design, construction, commissioning, operation and decommissioning of nuclear facilities or radioactive waste storage or disposal facilities; processing of uranium ore; transport of radioactive material; processing, storage and disposal of radioactive waste; manufacture, storage, use and maintenance of radiation sources; activities related to the physical protection of nuclear material; and training of personnel operating nuclear facilities. The Law also provides for exemptions from licensing requirements for the use of certain radiation sources. Furthermore, it describes the licensing procedure and the content of a licence, including any conditions, which may be attached thereto.

Supervision to ensure compliance with licence conditions is carried out through inspections and analysis of nuclear and radiation safety. The licensing authority may suspend or revoke a licence.

The Law also requires certification of, *inter alia*, radiation sources, packages for radioactive waste storage or disposal and packages for radioactive material transportation. Radioactive sources are also subject to State registration.

Lastly, this Law amends Section 33 of the 1995 Law on the Use of Nuclear Energy and Radiation Safety on the definition of "operating organisation".

2. The full text in English of this Law was reproduced in the Supplement to *Nuclear Law Bulletin* No. 66 (December 2000) and is available on the NEA Web site at: www.nea.fr/html/law/nlb/Nlb-66/Supplement.pdf.

Law on Protection against Ionising Radiation

The Law on Protection against Ionising Radiation of 14 January 1998 entered into force on 19 February 1998, with the exception of Section 19 which came into force on 1 January 2000. Its objective is to protect the health and property of the public against the harmful effects of ionising radiation caused by activities related to the utilisation of nuclear installations, sources of ionising radiation (including radioactive waste), and in the event of a radiation accident. The Law establishes maximum permissible dose limits for exposure to radiation of 20 mSv per year for occupationally exposed persons and 1 mSv per year for members of the public. The Law also identifies the authorities at executive, ministerial and local levels, which are responsible for its implementation and imposes special duties upon certain individuals and organisations with regard to protecting the public in the event of a radiation accident. It also provides for protective measures against the effects of radionuclides which are contained in building materials, foodstuffs and potable water, or which are used for medical treatment or diagnostic purposes. In addition, the Law establishes rules concerning compensation for damage resulting from ionising radiation.

There are several regulatory documents in the field of radiation safety, in which the provisions of the above mentioned Law are detailed, including:

- Radiation Safety Norms (NRBU-97), which entered into force on 1 January 1998;
- Radiation Safety Norms (NRB-76/87), which are the principal measures regulating radiation protection requirements for NPPs in operation during the transitional period before reduction of radiation safety levels in compliance with NRBU-97;
- General Provisions of Safety Assurance of NPPs (OPB-88 Pi), which govern safety issues in relation to specific features of NPPs as a possible source of radiation impact upon the personnel, the public and the environment; and
- Rules for Radiation Safety at Operational NPPs (PRB AS-89), which set out organisational and technical requirements in relation to radiation safety of the personnel and the public and protection of the environment at NPPs during their commissioning, operation and decommissioning.

Law on Civil Liability for Nuclear Damage and its Financial Security

This Law³ was adopted on 13 December 2001 and it entered into force on 16 January 2002. It establishes rules and procedures governing liability for and indemnification of damage caused by a nuclear incident, including measures to ensure financial cover of such liability. This Law incorporates the principles established in the 1963 Vienna Convention on Civil Liability for Nuclear Damage, to which Ukraine is a Party, into domestic legislation. It provides for the strict and exclusive liability of the nuclear operator, limited to the equivalent of 150 million Special Drawing Rights (SDR) per nuclear incident. Nuclear damage is defined as personal (death or injury) and property damage. It further provides that liability for loss of life is limited to the equivalent of 2 000 times the official untaxed minimum income and liability for personal injury or damage to property is limited to 5 000 times that sum.

3. The full text in English of this Law was reproduced in the Supplement to *Nuclear Law Bulletin* No. 69 (June 2002) and is available on the NEA Web site at: www.nea.fr/html/law/nlb/nlb-69/Ukraine.pdf.

Pursuant to this Law, the operator is required to secure a financial guarantee to cover its liability, through insurance or other authorised types of financial security. The Cabinet of Ministers may grant the operator a State guarantee for this purpose. Insurers who provide such civil liability insurance must be licensed to provide this type of insurance and also be members of a nuclear insurance pool. Insurers may enter into re-insurance contracts with foreign insurers as long as the foreign insurers are members of the relevant foreign nuclear insurance pool. The Law further provides that if the operator is in bankrupt, the State will grant funds to compensate nuclear damage.

The Cabinet of Ministers, in its Resolution No. 953 of 23 June 2003, approved procedures and rules for the mandatory insurance of civil liability for nuclear damage, specific licensing terms for activities requiring civil liability insurance for nuclear damage, a Statute on a national nuclear insurance pool, a standard form of agreement for mandatory civil liability insurance for nuclear damage and a procedure for calculating premiums for such insurance.

Law on Radioactive Waste Management

The purpose of Law No. 256/95 on Radioactive Waste Management, which was adopted and entered into force on 30 June 1995, is to protect humans and the environment against the hazards of radioactive waste. It establishes the basic principles of state policy on the management of such waste. In particular, it contains provisions dealing with storage operations and the establishment of a special public fund to finance the cost of the radioactive waste management programme.

Storage operations are subject to prior licensing and are financed from the special public fund. The fund is constituted according to a procedure decided by the Cabinet of Ministers. In the event of an accident involving waste, its owner is held liable and must eliminate the source and mitigate the consequences of the resulting damage.

Law on Basic Principles Governing the Decommissioning of Chernobyl NPP

On 11 December 1998, the Ukrainian Parliament approved the Law on Basic Principles Governing the Decommissioning of Chernobyl NPP and the Transformation of its Destroyed Unit 4 into an Environmentally Safe Area. This Law aims to develop legal principles governing the decommissioning of Chernobyl NPP, to ensure the rehabilitation of Unit 4 and social security cover for the personnel of the power plant and the population of Slavutich city.

This legislation aims also to determine criteria for the more efficient use of international technical assistance offered for the above purposes, and to establish a special tax regime for commercial entities within the administrative territory of Slavutich city. Activities involving the early closure and decommissioning of Chernobyl, or measures of reinstatement of the impaired environment must be approved by the Cabinet of Ministers of Ukraine. Such activities are financed through the State budget, funds from *Energoatom*, international technical assistance or voluntary contributions and, in the event of measures of reinstatement of the impaired environment, by the Fund for the elimination of the consequences of the Chernobyl catastrophe and security of the population.

Law on Physical Protection of Nuclear Facilities, Nuclear Material, Radioactive Waste and Other Radiation Sources

This Law was adopted on 19 October 2000 and entered into force on 5 January 2001. It defines the legal basis for activities of physical and legal entities in the field of the physical protection of nuclear facilities, nuclear materials, radioactive waste and other sources of ionising radiation. The Law aims to protect national security interests, prevent nuclear terrorist acts, the theft or any other unauthorised movement of nuclear materials and to strengthen the nuclear non-proliferation regime by establishing a state physical protection regime. The rules of physical protection are to be determined according to the possible threat of criminal aggression against facilities, material or waste and they shall be applied on the basis of recent developments in science and engineering.

The Law further establishes a system of State inspection of physical protection and also lays down requirements in relation to professional training.

Law on Uranium Ore Mining and Processing

This Law, which was adopted on 19 November 1997 and entered into force on 19 December 1997, regulates uranium mining, reprocessing and trading activities. It contains specific provisions for the protection of uranium mine workers, the public and the environment against the harmful effects of ionising radiation.

Other Relevant Legislation

Law on Civil Defence

This Law, which was adopted and entered into force on 3 February 1993, defines the following basic tasks of the State authorities: emergency prevention, reduction of damage and losses as a result of an accident and the early notification of the public about an emergency. This Law establishes a system of analysis and control, early notification and communication and a special system for the supervision, control and monitoring of the radioactive contamination.

Law on the Energy Sector

The Law on the Energy Sector, adopted on 16 October 1997, defines the legislative, economic and organisational framework governing activities in the energy sector. It regulates relations connected with the production, transfer, supply, delivery and use of energy, ensuring compliance with the rules on safety, competition and consumers' and workers' rights.

Certain regulatory documents inherited from the former USSR are still in force, pending revision of these documents.

The following regulations should also be noted: the Decision of the Cabinet of Ministers of 12 April 1992 on the fuel cycle, the Decision of the Cabinet of Ministers of 27 January 1993 on the Transport of Radioactive Substances, the Decision of the Cabinet of Ministers of 11 August 1995 establishing a State Agency Responsible for the Physical Protection of Nuclear Materials and Installations, the Decree of the Cabinet of Ministers of 12 March 1996 on the Control for Export,

Import and Transit of Goods Related to Nuclear Activities, and finally the Decree of the Cabinet of Ministers of 18 December 1996 on the State System for Accounting and Control of Nuclear Materials.

Other relevant legislative instruments include the Law of 1991 on Protection of the Environment, the Law of 1992 on Air Quality, the Law of 1994 on the Protection of Public Health, the Civil Code, the Penal Code, the Administrative Code and the Land Use Code.

Draft Legislation and Regulations

Ukraine is currently preparing a number of draft laws. The main drafts under consideration are:

- Draft Law on Conditions for the Privatisation of Atomic Energy Enterprises, which is a *lex specialis* of the draft Law concerning privatisation in the energy sector.
- Draft Law on Transportation of Dangerous Substances, which includes the transportation of nuclear substances and is designed to reflect the principles of the Convention on Liability and Compensation for Damage in Connection with the Carriage of Hazardous & Noxious Substances by Sea (HNS) and the IAEA rules on transportation of dangerous substances.
- Draft Law on the Creation of a Special Fund for the Implementation of Measures on State Regulation of Nuclear and Radiation Safety.
- Draft Law on Amendments to the Law on the Taxation System, which provides for introduction of a compulsory fee in respect of electric power generated at NPPs to be lodged to the above Fund in order to help finance activities related to the state regulation of nuclear and radiation safety.

International Conventions

Nuclear Third Party Liability

- Ukraine acceded to the 1963 Vienna Convention on Civil Liability for Nuclear Damage on 20 September 1996 and it entered into force in this country on 20 December 1996. Ukraine also signed the 1997 Protocol to Amend the Vienna Convention on 29 September 1997.
- Ukraine acceded to the 1988 Joint Protocol relating to the Application of the Vienna Convention and the Paris Convention on 24 March 2000 and it entered into force in this country on 24 June 2000.
- Ukraine signed the 1997 Convention on Supplementary Compensation for Nuclear Damage on 29 September 1997.

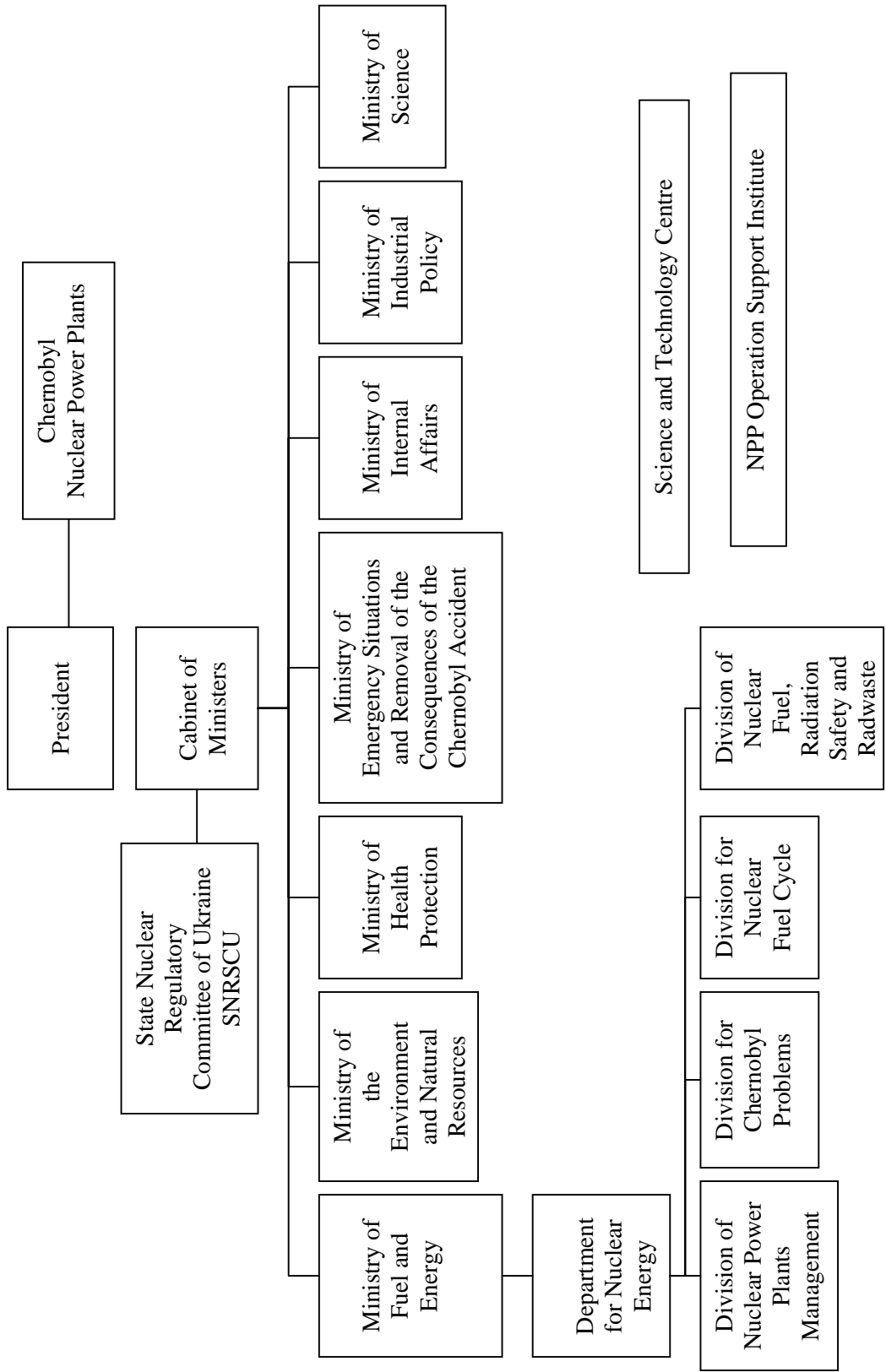
Other International Conventions

- Ukraine ratified the 1960 Convention concerning the Protection of Workers against Ionising Radiation on 19 June 1968 and it entered into force in this country on 19 June 1969.
- Ukraine ratified the 1963 Treaty Banning Nuclear Weapons Tests in the Atmosphere, in Outer Space and under Water on 30 December 1963 and it entered into force in this country on the same date.
- Ukraine acceded to the 1968 Treaty on the Non-Proliferation of Nuclear Weapons on 5 December 1994 and it entered into force in this country on the same date.
- Ukraine ratified the 1971 Treaty on the Prohibition of the Emplacement of Nuclear Weapons and other Weapons of Mass Destruction on the Sea-Bed and the Ocean Floor and in the Subsoil thereof on 3 September 1971 and it entered into force in this country on 18 May 1972.
- Ukraine ratified the 1972 Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter on 5 February 1976.
- Ukraine acceded to the 1979 Convention on Physical Protection of Nuclear Material on 6 July 1993 and it entered into force in this country on 5 August 1993.
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Membership in Nuclear Organisations

Ukraine is a member of the International Atomic Energy Agency (IAEA) and *Energoatom* is a member of the World Association of Nuclear Operators (WANO). Ukraine also joined the Nuclear Suppliers Group and the Zangger Committee.

UKRAINE
Competent Authorities for Nuclear Energy



UZBEKISTAN

Introduction

There are no nuclear power plants or reactors in Uzbekistan at present. However, there is a WWR-SM research reactor (10 MWe) at the Nuclear Physics Institute of the Academy of Science of Uzbekistan, located in Tashkent.

Uzbekistan also has a large uranium reserve. Uranium is produced at Uchkuduk, Zafarabad and Nurabad by the Navoi Mining and Metallurgy Combine which accounts for approximately 7% of world production.

Finally, there is a low level radioactive waste disposal facility located near Tashkent, operated by the Institute of Nuclear Physics.

Competent Nuclear Authorities

Pursuant to the Law on Radiation Protection, the Cabinet of Ministers is responsible for regulating radiation protection and authorising import and export of ionising radiation sources.

The following bodies are involved in the nuclear energy field:

- The State Committee for Safety in Industry and Mining (*Gosgortekhnadzor*) is responsible for nuclear safety. It is entitled to deliver licences for the possession and the use of ionising radiation sources. It also regulates the transport, storage and use of radioactive materials and ionising radiation sources. The Nuclear Regulations Inspectorate under the *Gosgortekhnadzor* has responsibility for the control and supervision of the nuclear research reactor and all nuclear and radioactive materials (including spent fuel) in Uzbekistan.
- The Ministry of Internal Affairs is in charge of the storage of radioactive materials.
- The Ministry of Health is responsible for radiation protection during medical uses. Its radiological Division delivers licences for the use of ionising radiation for medical purposes.
- The Ministry of Emergencies is responsible for responses to radiological accidents.
- The State Committee on the Conservation of Nature is responsible for the monitoring of the environment and remediation of contaminated sites.
- The State Customs Committee also has responsibilities pertaining to radiation safety.

The Institute of Nuclear Physics, founded in 1956 within the Academy of Science of Uzbekistan, conducts research and development programmes on nuclear energy.

Legislation in Force

Before April 1994, Uzbekistan applied the Standards for Radiation Safety and the Principle Health Rules issued by the Ministry for Health of the former USSR. Since it became a member of the IAEA, Uzbekistan has endeavoured to develop its own standards and rules for radiation safety based on international recommendations.

Law on Radiation Protection

This Law was adopted on 31 August 2000. It provides a legal framework to ensure the protection of human life and health, property and the environment against the risks of ionising radiation. It also sets out the three basic principles of radiation protection: dose limitation, justification and optimisation.

Under the Law, the public has the right to be compensated for personal and material damage due to radiation, to receive full and objective information on the radiation levels in the environment and in consumer goods, and to participate in discussions related to radiation protection. Special protections are granted to citizens living in territories where exposure to radiation would result in doses that are higher than the limits specified in the norms.

The Cabinet of Ministers is responsible for ensuring radiation protection by regulating in respect of compliance with radiation protection requirements, licensing of activities involving radiation sources, certification of agricultural and food products, fodder, drinking water, building materials and dose measurement equipment, and the assessment of radiation contamination.

The *Gosgortekhnadzor*, the Ministry of Health, the State Committee of Conservation of Nature and the State Customs Committee all have responsibilities for ensuring radiation protection. Production controls are carried out by the users of ionising radiation sources and social controls are imposed by non-governmental and non-commercial organisations as well as by private citizens.

Research and development activities involving radiation, the design and manufacture of radiation sources, the construction and production of radiation equipment, mining, and the production, reprocessing, use, storage, transport, and disposal of ionising radiation sources are all subject to licensing. Furthermore, the manufacture, storage and transport of raw foodstuffs, food products, and drinking water must comply with radiation protection requirements. Isolation of radioactive waste during its storage and disposal must also be ensured.

Radiation protection is ensured, *inter alia*, through the monitoring and control of personal doses received, requiring compensation for damage caused by ionising radiation, regulating the export and import of radiation sources, providing information to the public on radiation levels and radiation protection measures, through medical supervision and by clean-up of contamination following a radiation accident in the territories affected. The users of radiation sources are required to: observe radiation protection requirements, develop and implement measures to ensure radiation protection, assess radiation levels at workplaces, in protected and controlled zones, and at disposal facilities. Users must also monitor and record personal doses received by their personnel, carry out training

programmes, inform their personnel of personal dose levels and radiation exposures at workplaces, and ensure medical monitoring of their personnel.

Regarding emergency preparedness, operators are required to protect the public and the environment against the effects of a radiation accident by establishing a list of potential emergencies and their consequences, by preparing an emergency plan, and by providing the means for mitigating the consequences of a radiation accident. In the event of a radiation emergency, users of radiation sources are required, *inter alia*, to take measures to protect workers and the public from the consequences of the accident, inform State bodies, provide medical assistance to victims, and prevent the release of radioactive substances into the environment.

Draft Legislation and Regulations

A draft Law on the Management of Radioactive Waste is under consideration as regards the treatment and disposal of nuclear waste originating from uranium mining industries.

A Law on Export Control is also under preparation.

International Agreements

Nuclear Third Party Liability

Uzbekistan is not a Party to any of the international conventions governing civil liability for nuclear damage.

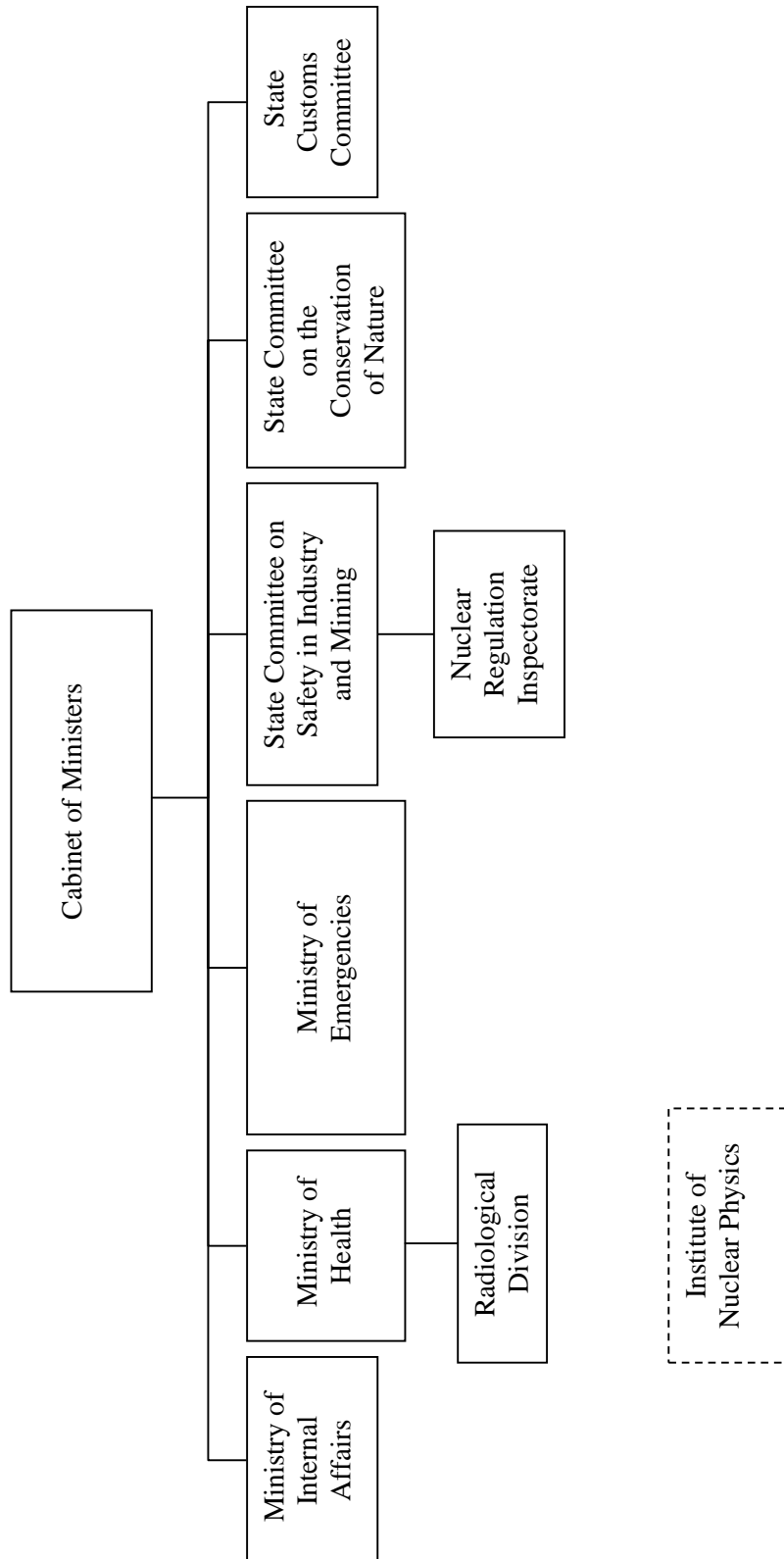
Other International Conventions

- Uzbekistan acceded to the 1968 Treaty on the Non-Proliferation of Nuclear Weapons on 7 May 1992.
- Uzbekistan acceded to the 1979 Convention on the Physical Protection of Nuclear Material on 9 February 1998 and it entered into force in this country on 11 March 1998.
- Uzbekistan ratified the 1996 Comprehensive Nuclear Test Ban Treaty on 29 May 1997.

Membership in Nuclear Organisations

Uzbekistan is a member of the International Atomic Energy Agency (IAEA).

UZBEKISTAN
Competent Nuclear Authorities



PARTICIPATION IN INTERNATIONAL NUCLEAR TREATIES

COUNTRY	1960 Convention on the Protection of Workers	1963 Vienna Convention on Civil Liability for Nuclear Damage	1963 Treaty Banning Nuclear Weapon Tests	1968 Non- Proliferation Treaty	1971 Nuclear Weapons Emplacement Treaty	1972 Convention on the Prevention of Marine Pollution	1979 Physical Protection Convention	1986 Early Notification Convention
Albania	NO	NO	NO	YES	NO	NO	YES	NO
Armenia	NO	YES	YES	YES	NO	NO	YES	YES
Azerbaijan	YES	NO	NO	YES	NO	YES	NO	NO
Belarus	YES	YES	YES	YES	YES	YES	YES	YES
Bosnia and Herzegovina	NO	YES	NO	YES	YES	NO	YES	YES
Bulgaria	NO	YES	YES	YES	YES	NO	YES	YES
Croatia	NO	YES	YES	YES	YES	YES	YES	YES
Czech Republic	YES	YES	YES	YES	YES	NO	YES	YES
Estonia	NO	YES	NO	YES	NO	NO	YES	YES
Georgia	NO	NO	NO	YES	NO	NO	NO	NO
Hungary	YES	YES	YES	YES	YES	YES	YES	YES
Kazakhstan	NO	NO	NO	YES	NO	NO	NO	NO
Latvia	YES	YES	NO	YES	YES	NO	YES	YES

PARTICIPATION IN INTERNATIONAL NUCLEAR TREATIES (continued)

COUNTRY	1960 Convention on the Protection of Workers	1963 Vienna Convention on Civil Liability for Nuclear Damage	1963 Treaty Banning Nuclear Weapon Tests	1968 Non- Proliferation Treaty	1971 Nuclear Weapons Emplacement Treaty	1972 Convention on the Prevention of Marine Pollution	1979 Physical Protection Convention	1986 Early Notification Convention
Lithuania	NO	YES	NO	YES	NO	NO	YES	YES
Former Yugoslav Republic of Macedonia	NO	YES	NO	YES	NO	NO	YES	YES
Republic of Moldova	NO	YES	NO	YES	NO	NO	YES	YES
Poland	YES	YES	YES	YES	YES	YES	YES	YES
Romania	NO	YES	YES	YES	YES	NON	YES	YES
Russian Federation	YES	SIGNED	YES	YES	YES	YES	YES	YES
Slovak Republic	YES	YES	YES	YES	YES	NON	YES	YES
Slovenia	NO	NO	YES	YES	YES	YES	YES	YES
Ukraine	YES	YES	YES	YES	YES	YES	YES	YES
Uzbekistan	NO	NO	NO	YES	NO	NO	YES	NO

PARTICIPATION IN INTERNATIONAL NUCLEAR TREATIES

COUNTRY	1986 Assistance Convention	1988 Joint Protocol	1994 Nuclear Safety Convention	1996 CTBT Treaty	1997 Protocol to Amend the Vienna Convention	1997 Convention on Supplementary Compensation	1997 Convention on Safe Management of Spent Fuel/Waste
Albania	YES	NO	NO	YES	NO	NO	NO
Armenia	YES	NO	YES	SIGNED	NO	NO	NO
Azerbaijan	NO	NO	NO	YES	NO	NO	NO
Belarus	YES	NO	YES	YES	YES	NO	YES
Bosnia and Herzegovina	YES	NO	NO	SIGNED	NO	NO	NO
Bulgaria	YES	YES	YES	YES	NO	NO	YES
Croatia	YES	YES	YES	YES	NO	NO	YES
Czech Republic	YES	YES	YES	YES	SIGNED	SIGNED	YES
Estonia	YES	YES	NO	YES	NO	NO	SIGNED
Georgia	NO	NO	NO	YES	NO	NO	NO
Hungary	YES	YES	YES	YES	SIGNED	NO	YES
Kazakhstan	NO	NO	SIGNED	YES	NO	NO	SIGNED
Latvia	YES	YES	YES	YES	YES	NO	YES
Lithuania	YES	YES	YES	YES	SIGNED	SIGNED	SIGNED

PARTICIPATION IN INTERNATIONAL NUCLEAR TREATIES (continued)

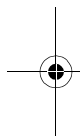
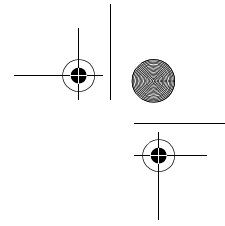
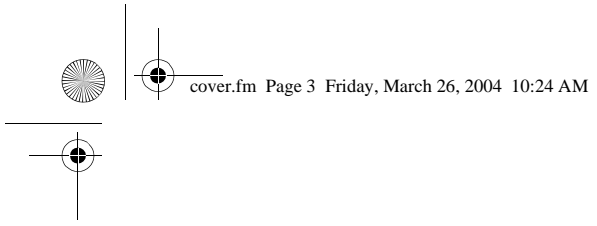
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Former Yugoslav Republic of Macedonia	YES	NO	NO	YES	NO	NO	NO
Republic of Moldova	YES	NO	YES	SIGNED	NO	NO	NO
Poland	YES	YES	YES	YES	SIGNED	NO	YES
Romania	YES	YES	YES	YES	YES	YES	YES
Russian Federation	YES	NO	YES	YES	NO	NO	SIGNED
Slovak Republic	YES	YES	YES	YES	NO	NO	YES
Slovenia	YES	YES	YES	YES	NO	NO	YES
Ukraine	YES	YES	YES	YES	SIGNED	SIGNED	YES
Uzbekistan	NO	NO	NO	YES	NO	NO	NO

PARTICIPATION IN INTERNATIONAL NUCLEAR TREATIES

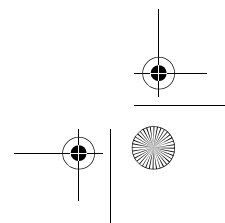
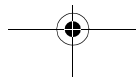
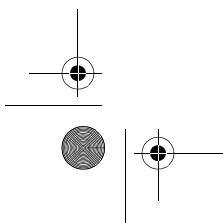
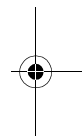
COUNTRY	1986 Assistance Convention	1988 Joint Protocol	1994 Nuclear Safety Convention	1996 CTBT Treaty	1997 Protocol to Amend the Vienna Convention	1997 Convention on Supplementary Compensation	1997 Convention on Safe Management of Spent Fuel/Waste
Albania	YES	NO	NO	YES	NO	NO	NO
Armenia	YES	NO	YES	SIGNED	NO	NO	NO
Azerbaijan	NO	NO	NO	YES	NO	NO	NO
Belarus	YES	NO	YES	YES	YES	NO	YES
Bosnia and Herzegovina	YES	NO	NO	SIGNED	NO	NO	NO
Bulgaria	YES	YES	YES	YES	NO	NO	YES
Croatia	YES	YES	YES	YES	NO	NO	YES
Czech Republic	YES	YES	YES	YES	SIGNED	SIGNED	YES
Estonia	YES	YES	NO	YES	NO	NO	SIGNED
Georgia	NO	NO	NO	YES	NO	NO	NO
Hungary	YES	YES	YES	YES	SIGNED	NO	YES
Kazakhstan	NO	NO	SIGNED	YES	NO	NO	SIGNED
Latvia	YES	YES	YES	YES	YES	NO	YES
Lithuania	YES	YES	YES	YES	SIGNED	SIGNED	SIGNED

PARTICIPATION IN INTERNATIONAL NUCLEAR TREATIES (continued)

COUNTRY	1986 Assistance Convention	1988 Joint Protocol	1994 Nuclear Safety Convention	1996 CTBT Treaty	1997 Protocol to Amend the Vienna Convention	1997 Convention on Supplementary Compensation	1997 Convention on Safe Management of Spent Fuel/Waste
Former Yugoslav Republic of Macedonia	YES	NO	NO	YES	NO	NO	NO
Republic of Moldova	YES	NO	YES	SIGNED	NO	NO	NO
Poland	YES	YES	YES	YES	SIGNED	NO	YES
Romania	YES	YES	YES	YES	YES	YES	YES
Russian Federation	YES	NO	YES	YES	NO	NO	SIGNED
Slovak Republic	YES	YES	YES	YES	NO	NO	YES
Slovenia	YES	YES	YES	YES	NO	NO	YES
Ukraine	YES	YES	YES	YES	SIGNED	SIGNED	YES
Uzbekistan	NO	NO	NO	YES	NO	NO	NO



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