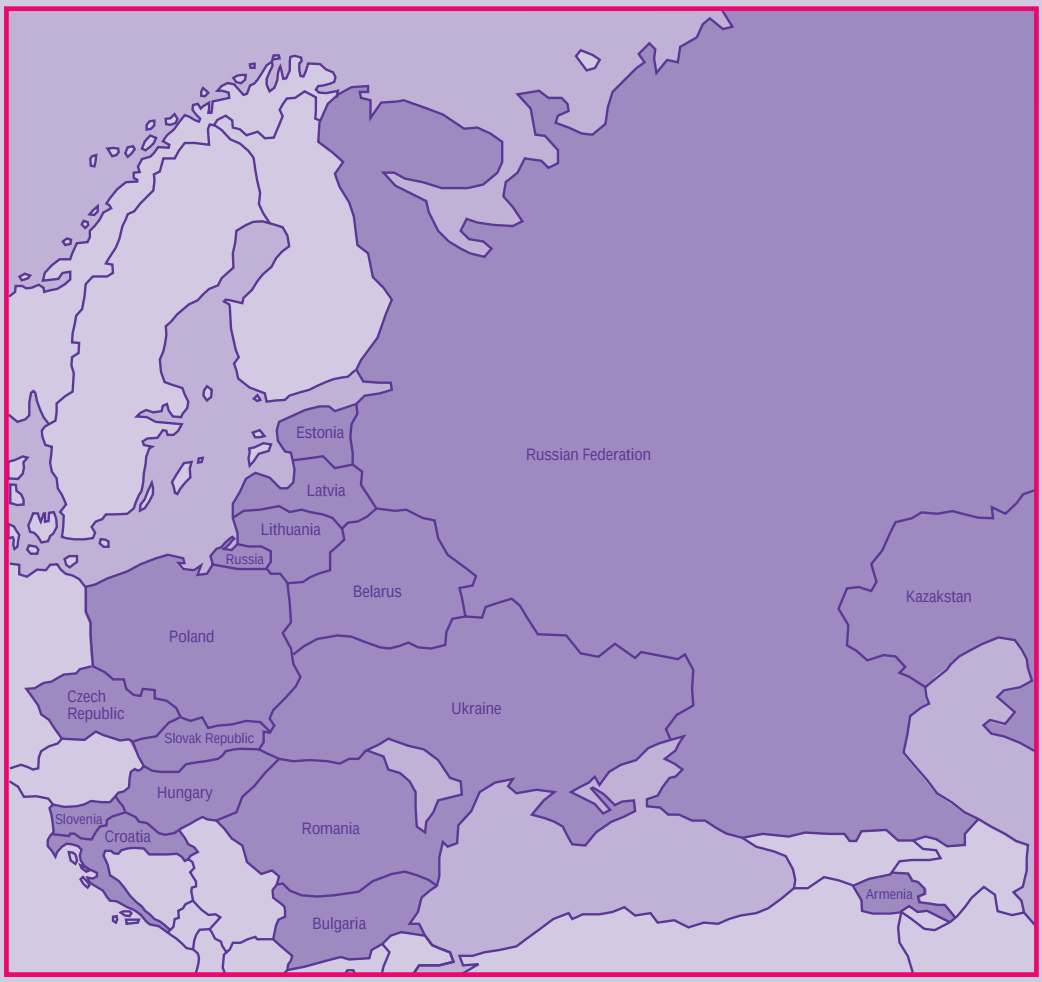
OECD DOCUMENTS

Overview of Nuclear Legislation in Central and Eastern Europe and the NIS



NUCLEAR ENERGY AGENCY

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OECD DOCUMENTS

Overview of Nuclear Legislation in Central and Eastern Europe and the NIS

NUCLEAR ENERGY AGENCY
ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT

ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT

Pursuant to Article 1 of the Convention signed in Paris on 14th December 1960, and which came into force on 30th September 1961, the Organisation for Economic Co-operation and Development (OECD) shall promote policies designed:

- 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.

The original Member countries of the OECD are Austria, Belgium, Canada, Denmark, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, the United Kingdom and the United States. The following countries became Members subsequently through accession at the dates indicated hereafter: Japan (28th April 1964), Finland (28th January 1969), Australia (7th June 1971), New Zealand (29th May 1973), Mexico (18th May 1994), the Czech Republic (21st December 1995), Hungary (7th May 1996), Poland (22nd November 1996) and the Republic of Korea (12th December 1996). The Commission of the European Communities takes part in the work of the OECD (Article 13 of the OECD Convention).

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 all OECD Member countries, except New Zealand and Poland. The Commission of the European Communities takes part in the work of the Agency.

The primary objective of the NEA is to promote co-operation among the governments of its participating countries in furthering the development of nuclear power as a safe, environmentally acceptable and economic energy source.

This is achieved by:

- *encouraging harmonization of national regulatory policies and practices, with particular reference to the safety of nuclear installations, protection of man against ionising radiation and preservation of the environment, radioactive waste management, and nuclear third party liability and insurance;*
- *assessing the contribution of nuclear power to the overall energy supply by keeping under review the technical and economic aspects of nuclear power growth and forecasting demand and supply for the different phases of the nuclear fuel cycle;*
- *developing exchanges of scientific and technical information particularly through participation in common services;*
- *setting up international research and development programmes and joint undertakings.*

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

Publié en français sous le titre :
PANORAMA DE LA LÉGISLATION NUCLÉAIRE EN EUROPE CENTRALE ET ORIENTALE
ET DANS LES NEI

FOREWORD

This study provides an overview of current legislation governing the peaceful uses of nuclear energy in Central and Eastern European countries and the New Independent States.

Revised to include information obtained since its original publication in October 1995, the current issue focuses on the institutional and legal frameworks which have been established in the countries under consideration. We wish to express our deep appreciation to all of our contacts in Eastern Europe, whose invaluable assistance helped make this new study possible.

The study follows a systematic format to facilitate research and comparison among the various countries. While certain legislative texts have already been cited in the NEA's *Nuclear Law Bulletin*, we thought that it would nevertheless be helpful to make brief references to such texts once again in the current study.

This study is derestricted on the responsiblity of the Secretary-General of the OECD.

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ARMENIA

Introduction

Armenia has one nuclear power station at Medzamor, which consists of two reactors, both VVER-440, model V230 (or V270 after the modification with seismic upgrades), and each with a capacity of 411 MWe. Only one reactor is currently in operation, Unit 2, having been returned to service in October 1995 after a six-year shutdown following an earthquake in December 1988. 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 nuclear plant between 2005 and 2010.

Competent Nuclear Authorities

In November 1993, the Armenian Government established a department to monitor nuclear and radiation safety, called the Armenian Nuclear Regulatory Authority (*Armgosatomnadzor*). This authority is responsible for regulating and supervising all uses of nuclear energy within Armenia. The utilisation of atomic energy must be done safely, so as to ensure the health of the public and of the personnel working at nuclear power stations and to protect the environment.

The Authority 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 obligations and responsibilities of the Authority and the tasks of its officials are stipulated by the Government in its "Statement concerning the Regulatory Authority".

The operator of the Medzamor Plant is the Armenian Nuclear Power Station, which 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 or radiation accident. The responsibility for the notification of nuclear accidents in the territory of Armenia is assigned to the Armenian Nuclear Regulatory Authority.

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

Legislation in Force

The Armenian Parliament approved Armenia's accession to the 1963 Vienna Convention on 24 August 1993 pursuant to Decision No. 317 of 22 June 1993. There is, however, no domestic legislation which effectively implements the provisions of this Convention at the national level. Nevertheless, Article 6 of the Armenian Constitution provides for the supremacy of international treaties ratified by the Armenian Republic over the domestic laws of that country.

Draft Legislation

The *Armgosatomnadzor* is preparing a draft law on Peaceful Uses of Atomic Energy. This law has the following objectives:

- to define government policy regarding the peaceful uses of nuclear energy and the basis and principles of nuclear legislation;
- to ensure the protection of people, property and the environment against the harmful effects of ionising radiation;
- to ensure the fulfilment of commitments under international agreements to which Armenia is a Party; and
- to prevent unauthorised export, import, transportation, use and disposal of nuclear and radioactive materials, radioactive waste, special materials, equipment and technologies.

Other legislation will be developed to define the responsibilities of competent bodies and the operator, and which will cover areas such as the nuclear safety of installations, the management of radiation sources and waste, the physical protection of nuclear materials, licensing procedures and third-party nuclear liability and compensation regime.

International Agreements

- **Civil Liability for Nuclear Damage**

Armenia acceded to the Vienna Convention on Civil Liability for Nuclear Damage on 24 August 1993 pursuant to Parliament Decision No. 317 of 22 June 1993. This Convention entered into force in Armenia on 24 November 1993. The Ministry of Energy, as the body responsible for the Armenian Nuclear Power Station, is the "operator" of nuclear installations, and is thus liable for any nuclear damage caused by these installations.

- **Other Conventions**

- 1963 Treaty Banning Nuclear Weapons Tests in the Atmosphere, in Outer Space and under Water was ratified on 7 June 1994 and entered into force on the same date;
- 1968 Treaty on the Non-Proliferation of Nuclear Weapons was acceded to on 15 July 1993 and entered into force on the same date;
- 1979 Convention on the Physical Protection of Nuclear Materials was acceded to on 24 August 1993 and entered into force on 23 September 1993;
- 1986 Convention on the Early Notification of a Nuclear Accident was acceded to on 24 August 1993 and entered into force on 24 September 1993;

- 1986 Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency was acceded to on 24 August 1993 and entered into force on 24 September 1993;

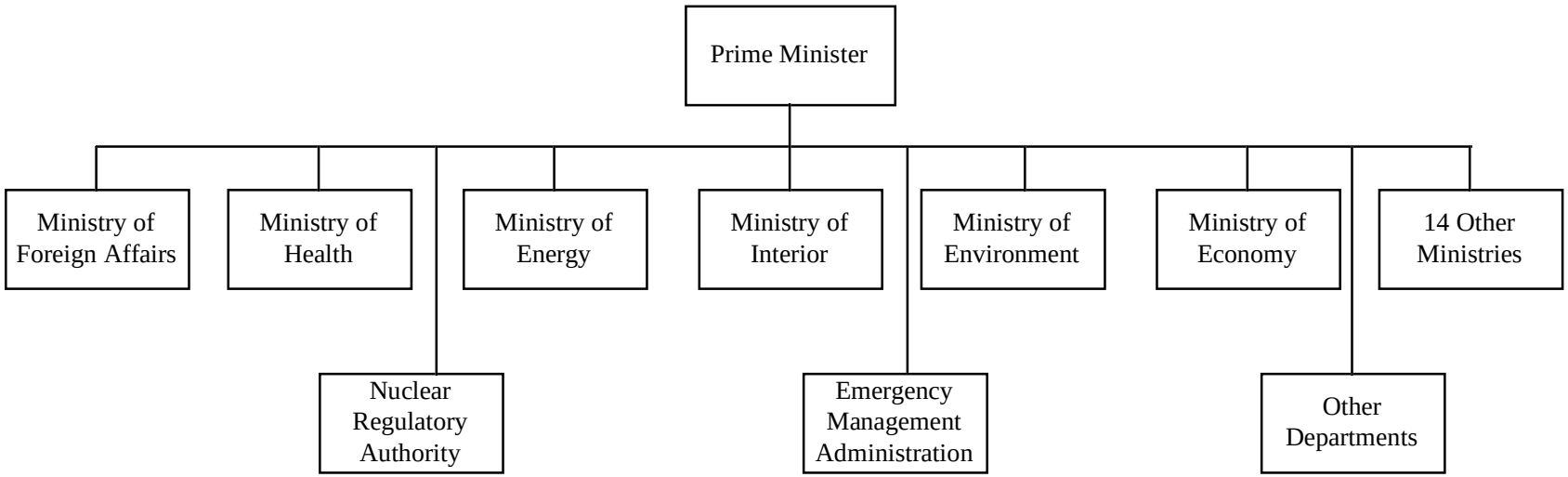
- 1994 Convention on Nuclear Safety was signed on 22 September 1994;

- 1996 Comprehensive Nuclear Test Ban Treaty was signed on 1 October 1996.

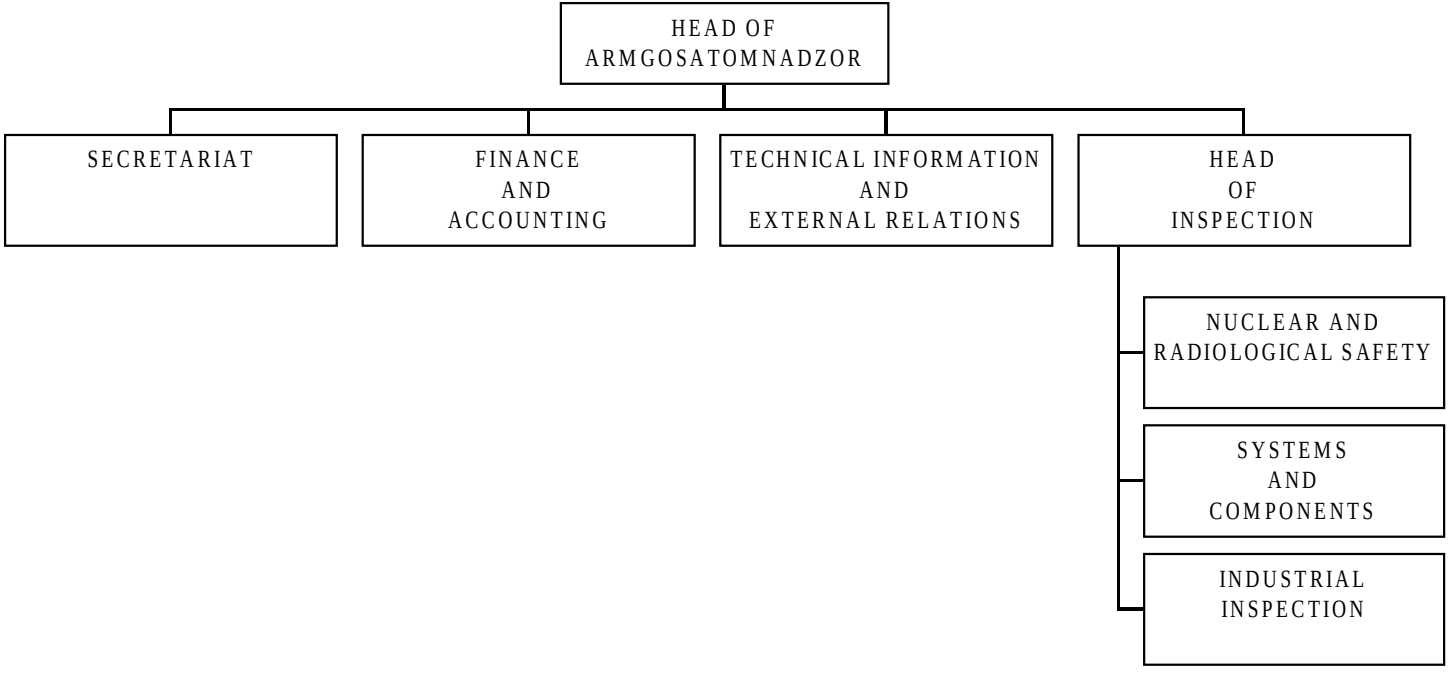
Membership in Nuclear Organisations

Armenia joined the International Atomic Energy Agency (IAEA) on 27 September 1993, and the Armenian Nuclear Power Station became a member of the World Association of Nuclear Operators (WANO) in August 1994.

ARMENIA
Competent Authorities for Nuclear Energy



ARMENIA
Armenian Nuclear Regulatory Authority "Armgosatomnadzor"



BELARUS

Introduction

There are no nuclear power plants in Belarus at present. However, the Government is studying the possibility of establishing such a facility. Work has begun on locating an acceptable site and on setting up an appropriate legal structure. In its State programme for the development of nuclear power, which is part of the National Programme for the Development of the Power Sector, Belarus called for the construction of a 1 000 MWe nuclear installation to commence operations between 2005-2010.

Competent Nuclear Authorities

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

Under the authority of the Cabinet of Ministers, three entities have jurisdiction in the nuclear field: the Ministry for Emergency Situations and Protection of the Public against Chernobyl NPP Disaster Consequences, the Ministry of Health and the Academy of Sciences.

The Ministry for Emergency Situations is responsible for dealing with the consequences of the Chernobyl disaster and for ensuring the protection of the public in this regard. It is furthermore responsible for implementing State policies associated with the protection of the general public, prevention of and intervention in cases of radiological emergencies, and re-use of previously contaminated land.

Two committees within this Ministry have specific responsibilities: the Committee for Supervision of Industrial and Nuclear Safety (Promatomnadzor) and the Committee for Hydrometeorology.

Promatomnadzor is responsible for developing the legislative, regulatory and technical framework for the use of atomic energy. It 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 issuance of licences, and the inspection of all activities involving ionising radiation sources and nuclear power plants. Inspections are carried out by personnel of the Committee's Department of Nuclear and Radiation Safety Regulation.

The Committee for Hydrometeorology is responsible for monitoring radiation in the environment. It is responsible also for the production of maps of areas contaminated by radionuclides.

In addition, two State enterprises have been established: "Polesye" (Gomel region) and "Radon" (Mogilev region) which, under the auspices of the Ministry for Emergency Situations, have assumed all waste management activities in the Chernobyl-contaminated areas.

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

The Academy of Sciences performs research in the nuclear field and provides consulting services to the Government.

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

Legislation in Force

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 nuclear energy is adopted. The latter law regulates the living conditions and economic and other related activities in the contaminated area. A Bill containing amendments and additions to both these laws is awaiting approval by the Cabinet of Ministers.

Pending the establishment of a new legal regime, the Government has extended the validity of a large number of regulations made during the existence of the former Soviet Union. Some of these regulations have been revised to take into account new Russian regulations and standards as well as certain IAEA standards. Examples in the field of radioactive waste management are the Basic Sanitary Rules for the Handling of Radioactive Substances and Other Ionising Radiation Sources, 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 Bill on Activities Involving the Uses of Nuclear Energy and Radiation Safety is currently being drafted. The Bill sets out the principles for regulating the peaceful uses of nuclear energy and provides for the adoption of subsidiary legislation, such as regulations and rules, in order to meet concrete objectives. The Bill also makes reference to international agreements to which Belarus is a Party and stipulates that the provisions contained in such agreements shall take precedence over national legislation falling outside the scope of the present Bill.

Belarus has modelled its legislation on internationally agreed principles of nuclear law; the Bill therefore aims to deal with three main issues:

- to guarantee the safe operation of nuclear installations and the safe treatment of nuclear materials, as well as to prevent nuclear accidents likely to harm the public, the environment or the health of workers on the site of nuclear installations;

- to guarantee equitable compensation for nuclear damage; and

- to satisfy international obligations in the atomic energy field; to this effect, the Bill contains basic provisions found in relevant international conventions (NPT, physical protection, etc.).

The regulation of nuclear safety for activities involving the use of nuclear energy are based on the following basic principles:

- any such activity requires authorisation (licensing);
- the licensed activity is subject to continuous control by inspections;
- the powers of the regulatory, licensing and inspection body are regulated by law. This body is responsible for setting up sufficient regulatory measures and is not permitted to exercise any management functions in respect of any nuclear or radiation facilities; and
- there is a strict separation of safety regulation functions from functions of safety implementation.

Furthermore, the draft Bill establishes the legal status of entities which conduct nuclear activities and the procedures for construction of nuclear facilities as well as transportation of nuclear and radioactive materials. It imposes a strict requirement to ensure the physical protection of nuclear materials, installations, radioactive substances, storage facilities and radiation sources and an obligation to ensure that their use is only for peaceful purposes.

The Bill contains provisions that closely follow the Vienna Convention on Civil Liability for Nuclear Damage. It defines "nuclear damage" as including damage to persons due to a nuclear accident and damage due to loss of property. It reflects the principle of "channelling of liability" and imposes "strict liability" upon the operator for nuclear damage resulting from an accident at its nuclear facility or during transport of nuclear materials. Intentional conduct by the victim causing damage will provide the operator with the right of action against the victim, provided that the operator proves that such conduct has taken place. The maximum amount of liability and the mandatory insurance coverage to secure that liability will be set by the Supreme Soviet. The Cabinet of Ministers will guarantee payment of compensation in the event of insufficient funds, insolvency or exoneration of the operator from liability.

This Bill will be supplemented by the draft "Law on Radiation Protection of the Population" which is under preparation. This draft Law sets out the fundamentals for regulating radiation protection for the public, radioactive waste management and the mitigation of consequences of radiation accidents. It lays down the conditions for ensuring the safeguarding of human life and health and for the protection of the environment against the harmful effects of ionising radiation. It was approved by the Chamber of Representatives in May 1997, and it is expected that it will be adopted in 1998.

On the basis of these two Bills, Belarus will enact a number of implementing regulations which the Government has approved. These are Regulations on State supervision of the safe conduct of works, regulations on licensing, and additional regulations concerning nuclear and radiation safety.

Draft legislation is also being prepared to cover the following: basic sanitary rules for handling radioactive substances and ionising radiation sources; radioactive waste management; transport of radioactive substances; nuclear third party liability and financial security for nuclear hazards.

International Conventions

- **Civil Liability for Nuclear Damage**

Belarus signed the Vienna Convention on Civil Liability for Nuclear Damage on 27 May 1997 pursuant to a Decree No. 264 of 2 May 1997 by the President of Belarus.

- **Other Conventions**

  - 1960 Convention concerning the Protection of Workers against Ionising Radiation (ILO No. 115) was ratified on 29 July 1969 and entered into force on the same date;

  - 1963 Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and under Water was signed on 8 October 1963 ;

  - 1968 Treaty on the Non-Proliferation of Nuclear Weapons was acceded to on 22 July 1993 and entered into force 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 was ratified on 14 September 1971 and entered into force on 18 May 1972;

  - 1979 Convention on the Physical Protection of Nuclear Material, was succeeded to on 9 September 1993 and entered into force on 14 June 1993;

  - 1986 Convention on Early Notification of a Nuclear Accident was ratified on 26 January 1987 and entered into force on 26 February 1987;

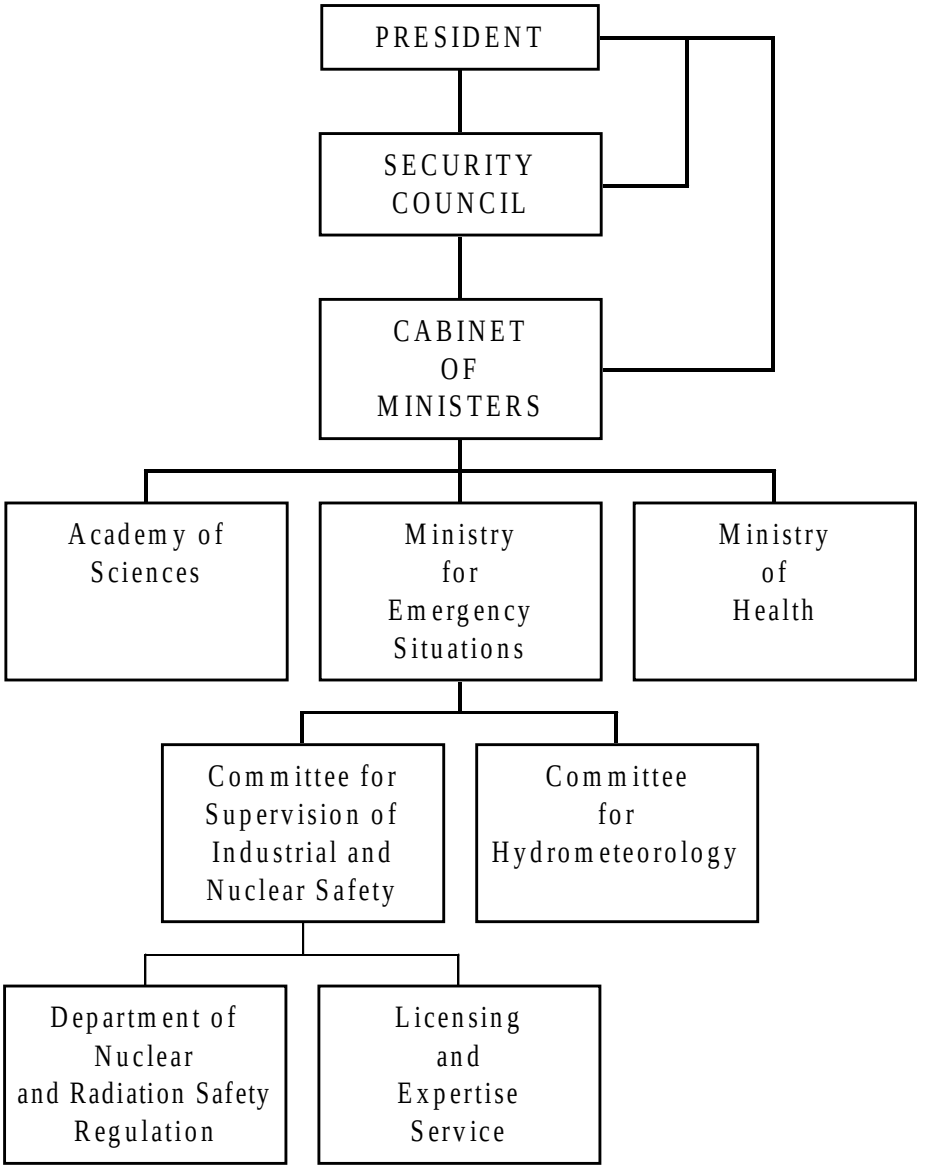
  - 1986 Convention on Assistance in Case of a Nuclear Accident or Radiological Emergency was ratified on 26 January 1987 and entered into force on 26 February 1987;

  - 1996 Comprehensive Nuclear Test Ban Treaty was signed on 24 September 1996.

Membership in Nuclear Organisations

Belarus joined the International Atomic Energy Agency (IAEA) in 29 July 1957.

BELARUS
Competent Authorities for Nuclear Energy



BULGARIA

Introduction

In Bulgaria, there are at present six operational units at the Kozloduy nuclear power station with a total capacity of 3 420 MWe. Four reactors are VVER-440s, model V230, and two are VVER-1 000.

The National Electric Company is the owner and operator of all Bulgarian equipment for the generation, transmission and distribution of electricity.

Competent Nuclear Authorities

The State Committee on the Use of Atomic Energy for Peaceful Purposes (CUAEPP), set up by the Atomic Energy Act of 7 October 1985, is the nuclear regulatory authority with jurisdiction over nuclear matters, including the implementation of national policy.

CUAEPP is made up of Ministerial representatives, together with those from other administrations involved in the safe use of nuclear energy, and is under the control of the Council of Ministers. It is led by a Chairperson and comprises an Executive Secretary, administrative services responsible for external relations and relations with the public, Advisory Councils and an Inspectorate for the Safe Use of Atomic Energy.

The Advisory Councils were set up to provide assistance and scientific advice, either upon the request of the Chairperson of the CUAEPP, or upon its own initiative. By the Amending Act of 1995 which amends the 1985 Act *supra*, two advisory bodies were established under the CUAEPP: the Council on the Safety of Nuclear Facilities, responsible for issues of safety at nuclear facilities and their licensing, and the Council on Radiation Protection, responsible for issues of radiation protection. The composition of these Councils is determined jointly by the Chairperson of the CUAEPP, the Minister for the Environment and the Minister for Public Health and is approved by the Council of Ministers.

The Inspectorate for the Safe Use of Atomic Energy has, by reason of its composition, a dual role: the safety of nuclear power plants and the safety of ionising radiation sources. It is comprised of:

- the Department of Nuclear Safety Control, which itself has two Divisions: the Division of Safe Operation of Nuclear Facilities and the Division for On-site Control of NPP Kozloduy. The Division for Safe Operation of Nuclear Facilities has two sections: the Section on Operational Regimes and the Section on Special Nuclear Material, Safeguards and Physical Protection. The Division for On-site Control of NPP Kozloduy ensures that nuclear safety requirements are met and places its inspectors on nuclear sites (six inspectors at Kozloduy);

- the Department for Nuclear Safety Assessment which itself has two sections and a centre.: the Section for Systems Analysis and Component Integrity, the Section for Accident Analysis and for the Centre Training and Qualification of NPP Personnel; and

– the Department of Radiation Protection, which has three sections and a laboratory: the Section for Registration and Control of Sealed Sources, the Section for Registration and Control of Open Sources and Natural Radioactive Materials, the Section for Radiation Protection of Nuclear and Radioactive Waste Facilities, and the Laboratory for Radiation Measurements.

The Inspectorate ensures that limits and conditions for the safe use of atomic energy are respected and that decisions and technical regulations are applied. In this way the Inspectorate is in a position to take all immediate measures, necessary to ensure nuclear safety. The Inspectorate also keeps a record of all sources of ionising radiation and all licences for the use, storage, transport and disposal of nuclear materials and for the commissioning and decommissioning of nuclear power plants.

The National Radiobiology Centre, created by Regulation of 18 June 1993 (Official Gazette No. 52 of 1993) operates as a specialised body under the Ministry of Health, and has jurisdiction over radiobiological issues, radiation protection and medical emergencies. The Radiobiology Centre supervises the activities of the Health and Epidemiology Centre with regard to regular radiation monitoring and medical controls of exposed workers. The Centre also deals with preventive measures, diagnostics, scientific and technical activities in these fields.

On the initiative of the nuclear regulatory authority, a VVER Regulators Association was established in December 1993 with the aim of improving the safety of the VVER reactors by co-operation in the development of regulatory policy and safety requirements.

The Bulgarian Institute for Nuclear Research and Nuclear Energy is the official Institute responsible for research in nuclear energy in Bulgaria.

Legislation in Force

- **Act on the Use of Atomic Energy for Peaceful Purposes**

The Act of 7 October 1985 (revised in 1995) on the Use of Atomic Energy for Peaceful Purposes (Atomic Energy Act)* governs all nuclear activities in Bulgaria. The Act was implemented by the Regulation on the Enforcement on the Atomic Energy Act adopted by the Council of Ministers in 1986 and by several other regulations.

The Atomic Energy Act contains five chapters: the first addresses the main principles of the peaceful uses of atomic energy; the second deals with managing the use of atomic energy; the third establishes State controls; the fourth addresses the question of nuclear third party liability and finally, the fifth chapter is devoted to administrative provisions and penalties.

The Act defines the objectives of the Committee on the Use of Atomic Energy for Peaceful Purposes:

– to establish programmes for the long-term use of nuclear energy, nuclear safety rules, accounting systems, and requirements for the storage and transport of nuclear materials;

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* The full text in English of the Atomic Energy Act was reproduced in the Supplement to *Nuclear Law Bulletin* No. 58 (December 1996).

- to implement Bulgaria's economic, scientific and technical co-operation with international organisations in the nuclear field;

- to determine criteria for the training, qualification and certification of personnel; and

- to determine and implement remedial measures for areas of the environment adversely affected by radiation sources.

All nuclear activities require a licence. The conditions and procedures for licences are set forth in the Atomic Energy Act and its implementing regulations. These regulations cover the following aspects:

- procedures for notifying the Committee of any modifications, occurrences or accidents during operation which have a bearing on nuclear and radiation safety (1987 Regulation);

- safety of nuclear power plants during design, construction and operation (1987 Regulation);

- accounting, storage, and transport of radioactive waste (1988 Regulation);

- authorisation for the use of nuclear energy (1988 Regulation);

- criteria and requirements for the training and qualification of personnel in order to maintain and improve their level of knowledge and experience (1989 Regulation);

- collection, treatment and final disposal of radioactive waste (1992 Regulation); and

- physical protection of nuclear installations and materials (1993 Regulation).

The provisions of the Act on nuclear third party liability apply to nuclear incidents and damage occurring on Bulgarian territory.

- **Regulations on the Application of the Atomic Energy Act with Regard to the Activities of the Nuclear Regulatory Authority and State Control of the Peaceful Uses of Atomic Energy**

Regulation No. 2 of 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 1987 of the CUAEPP provides for safety during the design, construction and operation of nuclear installations. It stipulates the main principles and safety criteria for nuclear installations with respect to ionising radiation sources during design, construction, operation and maintenance, and for operating personnel and emergency preparedness plans.

Regulation No. 4 of 1988 of the CUAEPP concerns procedures for storage and transport of nuclear material, provisions for physical protection of nuclear material during usage, storage and transportation and also defines the concepts used and the responsibilities of the relevant bodies.

Regulation No. 5 of 1988 of the CUAEPP, concerning the issue of licences on the use of atomic energy, determines the necessary documentation, conditions, procedures and terms for the issue of licences for the use of atomic energy. These licenses are granted by the Inspectorate for the Safe Use of Atomic Energy. This Regulation also contains provisions for the decommissioning of nuclear installations and other facilities using ionising radiation sources. A licence is necessary for the decommissioning of a nuclear facility. The documents to be submitted in order to obtain such a licence are also set out in the Regulation.

Regulation No. 6 of 1989 of the CUAEPP lays down criteria and requirements for the training, qualification and certification of those persons involved in the use of nuclear energy and sets out guidelines for recruiting qualified personnel and for maintaining and improving their qualifications.

Regulation No. 7 of 1992 of the CUAEPP stipulates the requirements for the collection, treatment, transport and disposal of radioactive waste in the territory of Bulgaria. Also included are provisions on protection and radiation control. However, the Regulation does not apply to spent nuclear fuel or to the waste resulting from its treatment. The Regulation prohibits the import and transport of radioactive waste which is not produced in Bulgaria through its territory as well as the discharge into industrial and municipal sewage systems, water basins and the soil of all types of radioactive waste.

Regulation No. 8 of the CUAEPP and the Ministry of Internal Affairs on the physical protection of nuclear installations and materials was adopted in August 1993. The Regulation lays down both institutional and technical requirements for the physical protection of nuclear materials in use, during transport and in storage. It takes into account the IAEA Recommendations on the Physical Protection of Nuclear Materials and the 1979 Convention on the Physical Protection of Nuclear Material.

Finally, Decree No. 252 of 1992 of the Council of Ministers on the Basic Norms of Radiation Protection stipulates basic requirements for protection against risks associated with exposure to ionising radiation which are based on the IAEA Safety Series No. 115-I.

- **1995 Amending Act Modifying the 1985 Atomic Energy Act**

The 1985 Atomic Energy Act was revised by an Amending Act, adopted by the National Assembly on 27 July 1995. This Act was published in Official Gazette No. 69 of 4 August 1995.

The main provisions of the Amending Act are the following:

- third party liability for nuclear damage – the Act's provisions are brought into line with those of the 1963 Vienna Convention;

- two funds are established, one for the decommissioning of nuclear facilities and one for the safe storage of radioactive waste, the latter being financed by persons generating radioactive waste and the former by operators of nuclear facilities;

- plans are to be made for special status zones around nuclear facilities and national radioactive waste storage sites;

- a clear separation is established between the functions of the national regulatory body and those of operators of nuclear installations; and

– two advisory bodies are created within the Committee on the Use of Atomic Energy for Peaceful Purposes: the Council on the Safety of Nuclear Facilities and the Council on Radiation Protection.

Furthermore, by the Act of 27 July 1994 adopted by the National Assembly (Official Gazette No. 64 of 1994), Parliament authorised the accession of Bulgaria to the 1963 Vienna Convention on Civil Liability for Nuclear Damage and to the 1988 Joint Protocol relating to the application of the Vienna Convention and the Paris Convention.

According to this Act, the liability of an operator of a nuclear installation in Bulgaria for third party nuclear damage is limited to the equivalent of 15 million SDRs and, in relation to other types of nuclear activities, limited to 5 million SDRs (this is also specified in the Amending Act). The 1994 Act specifies that the Vienna Convention will be applicable to Bulgaria from the date of deposit of its instrument of accession, i.e. on 24 November 1994.

The Council of Ministers of Bulgaria has also issued a Regulation excluding certain types of facilities which contain only small quantities of nuclear material 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, the State will ensure the payment of compensation claims for nuclear damage.

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 addition, Bulgaria plans to harmonise its domestic legislation with international provisions on the safe management of radioactive waste and on decommissioning.

A draft Bill on the Management of Radioactive Waste is currently under preparation.

International Conventions

- **Civil Liability for Nuclear Damage**

  – Bulgaria acceded to the 1963 Vienna Convention on 24 August 1994, which entered into force on 24 November 1994.

  – Bulgaria acceded to the 1988 Joint Protocol on 24 August 1994, which entered into force on 24 November 1994.

- **Other Conventions**

  – 1963 Treaty Banning Nuclear Weapons Tests in the Atmosphere, in Outer Space and under Water was signed on 8 October 1963 and entered into force on 13 November 1963;

- 1968 Treaty on the Non-Proliferation of Nuclear Weapons was ratified on 5 September 1969 and entered into force on 5 March 1970;

- 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 was ratified on 16 April 1971 and entered into force on 18 May 1972;

- 1979 Convention on the Physical Protection of Nuclear Material was ratified on 10 April 1984 and entered into force on 8 February 1987;

- 1986 Convention on Early Notification of a Nuclear Accident was ratified on 24 February 1988 and entered into force on 26 March 1988;

- 1986 Convention on Assistance in Case of a Nuclear Accident or Radiological Emergency was ratified on 24 February 1988 and entered into force on 26 March 1988;

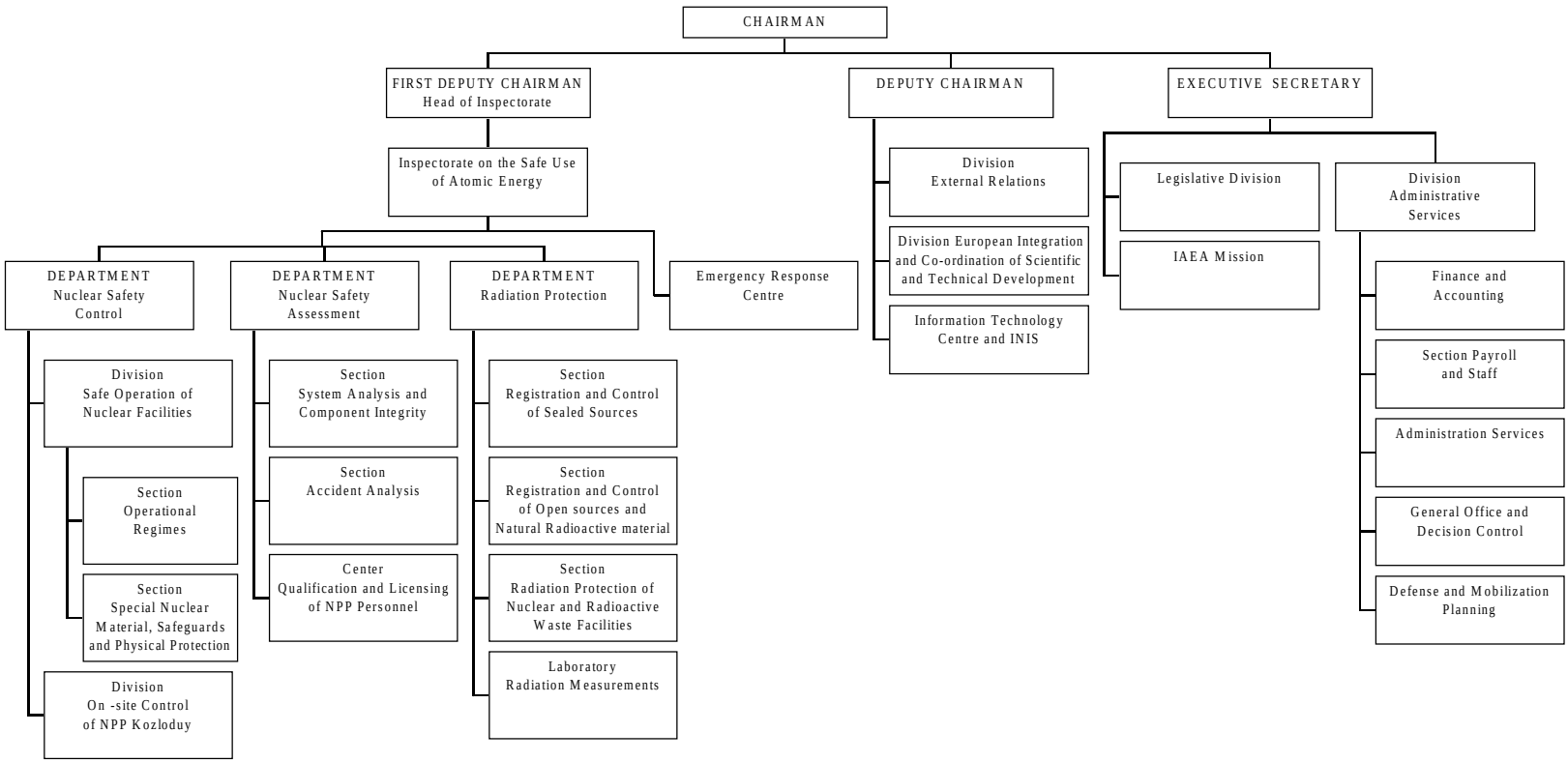
- 1994 Convention on Nuclear Safety was ratified on 8 November 1995 and entered into force on 24 October 1996;

- 1996 Comprehensive Nuclear Test Ban Treaty was signed on 24 September 1996.

Membership in Nuclear Organisations

Bulgaria joined the International Atomic Energy Agency (IAEA) on 17 August 1957, 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
Committee on the Use of Atomic Energy for Peaceful Purposes



CROATIA

Introduction

Croatia has no nuclear installations or nuclear fuel cycle facilities on its territory at present. However, the national electricity company (HEP) is a co-owner of the nuclear power plant situated at Krsko in Slovenia. HEP receives and distributes 50 per cent of the electricity produced by that plant but has no direct responsibility for its operation.

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

Competent Nuclear Authorities

There is currently no official independent nuclear regulatory body in the field of nuclear energy in Croatia. The Ministry of Economic Affairs is the authority with jurisdiction over nuclear safety, and it has a special Department responsible for Nuclear Safety. Radiation protection falls within the jurisdiction of the Ministry of Health.

However, Croatia intends to set up an independent regulatory body responsible for all nuclear activities. The Croatian authorities also intend to assess and identify sites for future nuclear facilities and to complete the development of the National Council for Radiation Protection and Nuclear Safety.

The National Council for Radiation Protection and Nuclear Safety was established in March 1995 as an advisory body to the Government and to co-ordinate activities in the field of radiation protection and nuclear safety. The Council's main task is to present to the Government proposals on radiation protection and nuclear safety, to monitor the implementation of the proposed measures and to present a report on those activities. The Council is also responsible for evaluating radiation protection and nuclear safety conditions in the Republic of Croatia, for reporting to the Government and for proposing measures to improve the existing situation. The Council is still being developed.

The Ministry of Economic Affairs is responsible for the dissemination of information to the public of environmental monitoring data related to radioactive releases from NPP Krsko in Slovenia and for all activities related to nuclear materials.

The Ministry of Health is responsible, *inter alia*, for the licensing, inspection and transport permits for radioactive materials and equipment generating ionising radiation, for personnel dosimetry, and for occupational radiation protection. It also maintains, through authorised institutions, personnel dose records, and is responsible for planning, preparedness and response management for radiological emergencies.

The Hazardous Waste Management Agency was originally set up in 1991. It is a national agency created to organise and perform activities related to the management of the disposal and storage of hazardous waste, including radioactive waste. The Agency also assists governmental bodies in the implementation of the 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 (site,

technical solutions, licences and transportation). It furthermore disseminates information to the public on the safe handling of hazardous and radioactive waste.

The Institute *Rudjer Boskovic* 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 in Zagreb has a computer centre for monitoring radioactivity in the environment and the Institute for Medical Research and Occupational Health possesses a radiological mobile laboratory. Finally, the University Clinical Centre *Rebro* in Zagreb has created hospital facilities for medical treatment of persons exposed to radiation (see the Chapter on Slovenia).

Legislation in Force

Croatia has legislation on nuclear safety which it inherited from the former Yugoslavia, namely the Act of 21 November 1984 On Radiation Protection and the Safe Use of Nuclear Energy*. This Act remained applicable as a Croatian law by Parliamentary decision of 8 October 1991. It establishes general provisions for radiation protection and other safety measures applicable to nuclear installations and materials (Off. Gaz. 53/91). The radiation safety legislation defines, in a general manner, responsibilities with respect to inspection of premises where ionising radiation is used and includes a system of notification, registration, and/or licensing for all uses of ionising radiation. It establishes dose limits for workers, apprentices and the public and requires prior authorisation for the import of radioactive material.

With respect to nuclear liability, the Act on Liability for Nuclear Damage was enacted in 1978 by the former Yugoslavia**. This Act remains applicable as a Croatian law according to the decision of 8 October 1991.

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

Draft Legislation and Regulations

The Croatian authorities consider the above-mentioned Act on Radiation Protection and Nuclear Safety to be inadequate. It is therefore currently being revised by the Ministry of Health, and new regulations are under preparation that incorporate relevant EU directives and the IAEA Basic Safety Standards (SS-115). They are expected to be submitted to Parliament in 1998. The Ministry of Health of Croatia has also prepared a Bill on the Ionising Radiation Protection and Nuclear Safety dated May 1996. The draft Law will constitute framework legislation for activities in the field of radiation protection and nuclear safety and will establish an independent regulatory body for radiation protection and nuclear safety.

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* The full text in English of this Act was reproduced in the Supplement to *Nuclear Law Bulletin* No. 36 (December 1985).

** The full text in English of this Act was reproduced in the Supplement to *Nuclear Law Bulletin* No. 23 (June 1979).

The Act on Third Party Liability for Nuclear Damage is under revision. A new draft law, which is at an advanced stage of preparation, is expected to be adopted before 1998, once necessary adjustments have been made to conform with the newly adopted international instruments in this area. It will incorporate the basic principles adopted in the Vienna Convention, such as channelling of liability onto the operator of a nuclear installation, strict and limited liability and mandatory insurance.

The emergency planning and preparedness programme is also under revision. It will be amended to extend its coverage to radiation exposure or contamination from all installations where radioactive materials are handled, instead of restricting its scope to neighbouring nuclear power plants (NPP Krsko in Slovenia and NPP Paks in Hungary). In addition, it will provide for a compulsory emergency monitoring programme. The programme has been approved by the competent ministries and is expected to be adopted in 1998.

International Conventions

- **Civil Liability for Nuclear Damage**

  - The Republic of Croatia succeeded to the 1963 Vienna Convention on 29 September 1992, and it effectively entered into force on 8 October 1991.

  - The Republic of Croatia acceded to the 1988 Joint Protocol on 10 May 1994, and it entered into force on 10 August 1994.

- **Other Conventions**

  - 1963 Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and under Water, was succeeded to on 29 September 1992, and it effectively entered into force on 8 October 1991;

  - 1968 Treaty on the Non-Proliferation of Nuclear Weapons, was succeeded to on 29 June 1992 and entered into force 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, was succeeded to on 8 October 1991 and entered into force on the same date;

  - 1979 Convention on the Physical Protection of Nuclear Materials, was succeeded to on 29 September 1992 , and it effectively entered into force on 8 October 1991;

  - 1986 Convention on Early Notification of a Nuclear Accident, was succeeded to on 29 September 1992 , and it effectively entered into force on 8 October 1991;

  - 1986 Convention on Assistance in case of a Nuclear Accident or Radiological Emergency, was succeeded to on 29 September 1992 , and it effectively entered into force on 8 October 1991;

- 1994 Convention on Nuclear Safety, was approved on 18 April 1996 and entered into force on 24 October 1996;

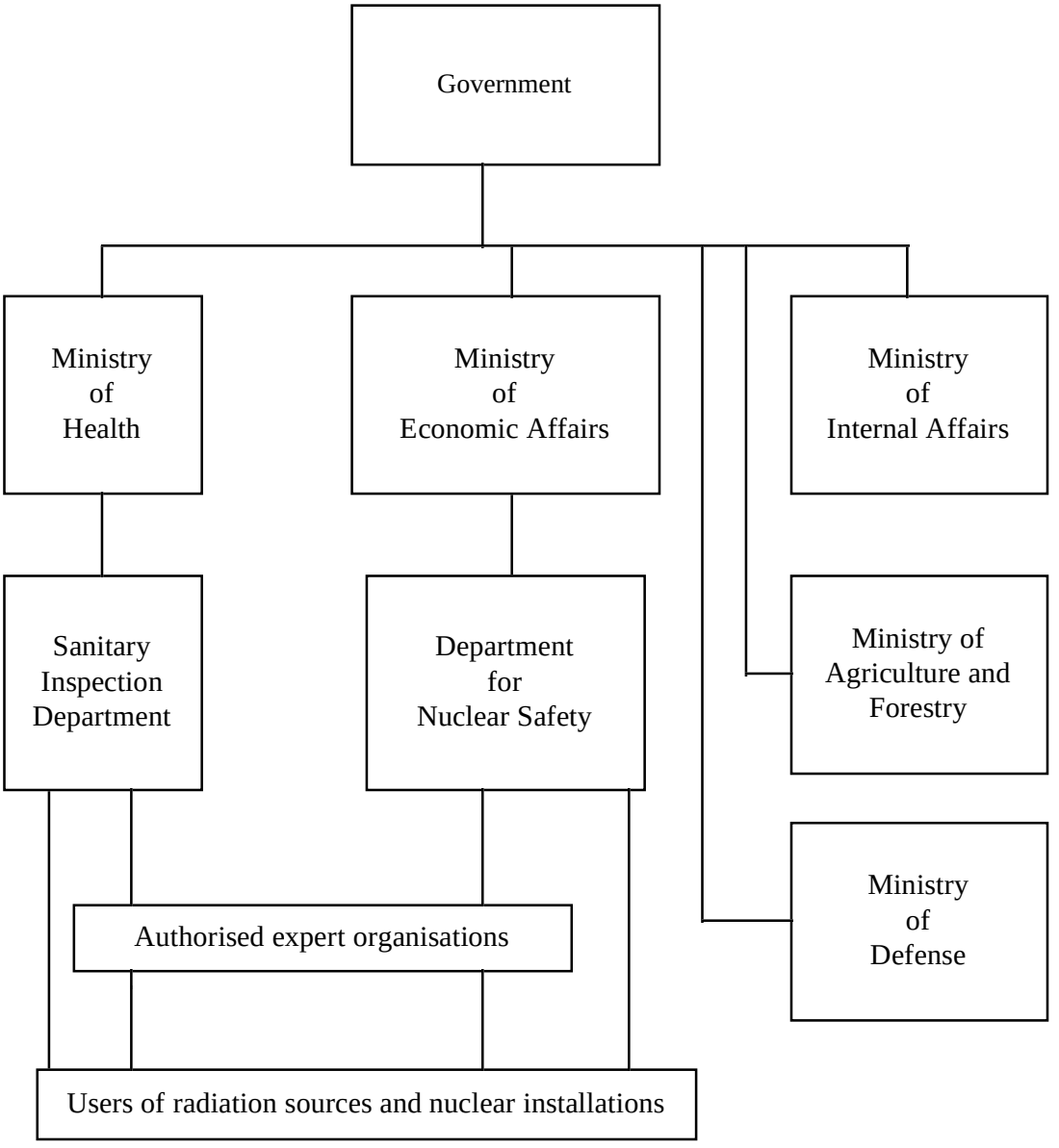
- 1996 Comprehensive Nuclear Test Ban Treaty was signed on 24 September 1996; and

- 1997 Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management was signed on 30 September 1997.

Membership in Nuclear Organisations

Croatia joined the International Atomic Energy Agency (IAEA) on 12 February 1993.

CROATIA
Competent Authorities for Nuclear Energy



CZECH REPUBLIC

Introduction

The Czech Republic operates one nuclear power station at Dukovany in South Moravia. This plant has four operational units (VVER-440/213) with a total installed capacity of 1 760 MWe. Two additional units (VVER-1 000), each with an installed capacity of 1 000 MWe, are under construction at Temelin NPP. In addition, the Czech Republic has three research reactors, several radioactive waste storage facilities, (such as the depositories Richard for institutional research and medical waste at Litomerice and Bratvstvi in Jachymov), a spent fuel interim storage facility and a low-level radioactive waste repository operated at Dukovany.

The utility CEZ (*Ceske Energeticke 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 (70%), reports to the Ministry of Industry and Trade.

Finally, Diamo (formerly *Ceskosbvensky Uranovy Prumysl*, or CSUP) is a state-owned company which 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.

Competent Nuclear Authorities

In the Czech Republic, the construction and operation of nuclear power plants and nuclear installations in general, as well as waste management and the decommissioning of nuclear installations, fall under the responsibility of the Ministry of Industry and Trade, which has the authority to:

- co-ordinate activities in the nuclear field in relation to the Government's economic policy;
- develop government policy in the nuclear area, including the management of radioactive waste and spent nuclear fuel;
- monitor the operation of the Dukovany NPP and the construction of the Temelin NPP;
- propose strategic reserves of nuclear materials;
- prepare intergovernmental treaties in the nuclear field and participate in the development of domestic legislation;

The State Office for Nuclear Safety (*Státní úrad pro jadernou bzepecnos*t or SONS) 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 SONS (Act No. 4/1993). SONS 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 SONS 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 SONS 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 fuels. 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, SONS co-ordinates the activities of the national Radiation Monitoring Network and ensures the functioning of the Emergency Response Centre, while providing for the exchange of international data on radiation conditions. Control of radiation protection previously fell under the competence of the Ministry of Health, but was transferred by the Czech Parliament to SONS on 19 April 1995 (Act No. 85/1995). Finally, SONS is also responsible for co-operation with the IAEA.

The Chairperson of SONS is appointed by the Government. SONS comprises two technical branches headed by Deputy Chairpersons, one of which is responsible for nuclear safety and the other for radiation protection. These sections are divided into departments and divisions.

The Nuclear Safety Section is comprised of the Department of Nuclear Safety Assessment, the Department of Components and Systems and the Department of Nuclear Materials, including two local site inspectorates at Dukovany and Temelin.

The Radiation Protection Section contains three departments; the Department of Radiation Sources and Nuclear Power, the Department of Regulation of Exposures and the Department of Waste Management and Environment, in addition to one independent Division for Licensing of Radiation Sources. To this Section also belong seven regional centres which report via the various Departments to the Deputy Chairperson of the Radiation Protection Section.

In addition, there exists the Department for Emergency Preparedness, which is directly subordinated to the SONS Chairperson. This Department manages the Emergency Response, and co-ordinates the operation of the national Radiation Monitoring Network.

SONS furthermore has a Management and Technical Support Section, headed by the Deputy Chairperson and containing three different departments: the Department of International Co-operation, the Department of Financial Management and Administration (Budget & Finance) and the Office Bureau, which includes a legal division. Finally, SONS supervises the functioning of the National Radiation Protection Institute.

The Ministry of the Interior is responsible for laying down the details of the district emergency plans and the off-site emergency plans, prepared by the various District Councils pursuant to the 1997 Atomic Act.

The Ministry of the Environment is responsible for regulating activities in the field of nuclear energy so that they comply with environmental laws. It ensures that the procedures on environmental impact assessment, which are a prerequisite for the licensing of various types of nuclear activities, are applied (Act No. 244/1992 on Environmental Impact Assessment).

The Ministry of Defence, sets out and controls emergency preparedness measures, a monitoring system, a notification and warning system, and means of public protection. It also aims to mitigate the consequences of a radiation accident.

The Czech Republic Governmental Commission for Radiation Accidents advises and issues recommendations in the field of radiation protection to the Government in the case of radiation accidents and emergency preparedness issues, in co-operation with the Department for Emergency Preparedness (Emergency Response Centre), a specialised office unit of SONS.

The national Radiation Monitoring 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 SONS to make decisions aimed at reducing or avoiding exposure. The Network is operated by the National Radiation Protection Institute under the authority of SONS.

Pursuant to the 1997 Atomic Act, a Radioactive Waste Repository Authority *(Aprava Ulozist radioacktivnich odpadu)* 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 after their closure. The Authority will be 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 important research Institutes in the field of nuclear energy. These are the Nuclear Research Institute, which also operates two research reactors and the Nuclear Physics Institute at Rez, which belongs to the Czech Academy of Science.

Legislation in Force

In the Czech Republic the legislation which governs all nuclear activities was adopted on 24 January 1997: Act on the Peaceful Uses of Nuclear Energy and Ionising Radiation and on Alteration and Amendments of Related Legislation (the Atomic Act) (*Collection of the Czech Laws, No. 18/1997, February 1997*)*. The Atomic Act repeals, among others, Act No. 28/1984 of 22 March 1984 on State Supervision of Nuclear Safety and of Nuclear Installations of the former Czechoslovakia.

It has as its main purpose 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 entered into force on 1 July 1997, with the exception of Chapter IV of Part I (on radioactive waste management), Chapter V of Part I (on civil liability for nuclear damage) and Section 48 (on the transfer of responsibilities for radioactive waste repositories), which entered into force on 24 January 1997. The Act contains five Parts. Part I includes the main body of the Act and lays down the general conditions for activities related to the use of nuclear energy and ionising radiation, and

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* The full text in English will be reproduced in the Supplement to *Nuclear Law Bulletin* No. 61 (June 1998).

rules related to radioactive waste management and to 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 Atomic Act also has an Annex which lists the documentation required for particular licensed activities.

The provisions of the Atomic Act apply to activities in the following fields:

- designing, siting, construction, commissioning, operation, reconstruction and decommissioning of nuclear installations;
- designing, manufacturing, repairs and verification of nuclear installation systems or their components, including materials used for their production;
- designing, production, repairs and verification of packaging assemblies for transportation, storage or disposal of nuclear materials;
- management of nuclear materials and of selected items and, in the case of their use in the nuclear field, also of items of dual use;
- research and development of activities mentioned above;
- professional training of natural persons, specialised from the nuclear safety viewpoint;
- transport of nuclear materials; and
- all other practices resulting in ionising radiation exposure.

Finally, the Atomic Act also amends certain related Acts, such as Act No. 425/1990 on District Councils, Act No. 283/1991 on the Police of the Czech Republic and Act No. 586/1992 on Income Taxes (Parts II, III and IV of the Atomic Act respectively).

The Atomic Act appoints SONS as the competent body for the licensing and inspection of nuclear facilities and workplaces dealing with ionising radiation. A licence is required for a number of activities involving the use of nuclear energy, such as the siting, construction, operation and decommissioning of workplaces using significant amounts of ionising radiation and of nuclear installations.

The construction of nuclear installations is also governed by the construction code (Act No. 50/1976). Prior to its construction, each nuclear installation must, in addition, undergo the procedure set out in the Environmental Impact Assessment Act (Act No. 244/1992).

Inspections of nuclear installations are carried out by nuclear safety and radiation protection inspectors employed by SONS. The inspectors are appointed by the Chairperson of SONS 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 Authority as responsible for storage and disposal of radioactive waste or of spent fuel, if it has been declared waste by the generator or by SONS.

Section 5 of 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 person who holds a licence 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 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 (approximately 150 million Special Drawing Rights or SDRs) 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 1.5 billion Czech crowns (approximately 37.5 million SDRs) 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 SONS 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 6 billion crowns must be covered by an insurance policy for at least 1.5 billion crowns; activities for which the ceiling is set at 1.5 billion crowns must be covered by insurance for at least 200 million crowns.

In order to adequately cover these potentially high 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, which is located in Prague, 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 10 years from

the occurrence of the nuclear incident with a time limit of three years from the moment the victim has discovered the damage.

Draft Legislation and Regulations

As a result of the adoption of the new Atomic Act, 14 legislative instruments dealing with nuclear energy (two laws, seven Decrees, five Directives) were repealed[1], and 17 new regulations implementing the provisions of the Atomic Act have been adopted or are under preparation (two by the Ministry of Industry and Trade, one by the Ministry of Interior and 14 by SONS). These new regulations cover issues such as the siting of nuclear facilities and workplaces with significant ionising radiation, the design and construction of nuclear facilities, the commissioning and operation of NPPs, radiation protection, the procedures for handling, use and safety of radioactive substances, criteria for ionising radiation, limits of permitted radioactivity, commissioning and operation of nuclear installations, trade in nuclear materials and equipment, transport of nuclear materials, licensing procedures and other procedural matters referred to in the Atomic Act.

The Czech Republic is preparing a draft Mining Act, which will introduce a new administrative procedure to better regulate the exploitation of minerals by enterprises.

International Conventions

- **Nuclear Third Party Liability**

  - The Czech Republic acceded to the 1963 Vienna Convention on 24 March 1994, and it entered into force on 24 June 1994;

  - The Czech Republic acceded to the 1988 Joint Protocol on 24 March 1994, and it entered into force on 24 June 1994.

1. According to Section 49, the Atomic Act abolishes Act No. 287/1993 on Competence of the State Office for Nuclear Safety, Act No. 28/1984 on State Supervision of Nuclear Safety of Nuclear Installations; Decree No. 59/1972 on Protection of Health from Ionising Radiation; Decree No. 28/1977 on Accountancy and Control of Nuclear Materials; Decree No. 67/1987 on Nuclear Safety Assurance in the Process of Radioactive Waste Management; Decree No. 100/1989 on Security Protection of Nuclear Installations and Nuclear Materials; Decree No. 191/1989 which Lays Down Methods, Terms and Conditions for Verification of Special Professional Qualification of Selected Workers in Nuclear Installations; Decree No. 436/1990 on Quality Assurance of Classified Facilities with Regards to Nuclear Safety of Nuclear Installations; Decree No. 76/1991 on a Reduction of Exposure from Radon and Other Natural Radionuclides; Directive No. 2/1978 on Nuclear Safety Assurance within the Process of Designing, Licensing and Realisation of Constructions Including Nuclear Energy Installation; Directive No. 4/1979 on General Criteria of Nuclear Safety Assurance within the Siting of Constructions Including Nuclear Energy Installation; Directive No. 6/1980 on Nuclear Safety Assurance within the Process of Nuclear Power Installation Commissioning and Operation ; Directive No. 8/1981 on Testing of Equipment for Transportation and Storage of Radioactive Materials and Directive No. 9/1985 on Nuclear Safety Assurance of Nuclear Research Installations.

- **Other Conventions**

  - 1960 Convention concerning the Protection of Workers against Ionising Radiation was succeeded to on 1 January 1992, and it entered into force on 1 January 1993;

  - 1963 Treaty Banning Nuclear Weapons Tests in the Atmosphere, in Outer Space and under Water, was succeeded to on 1 January 1993 and entered into force on the same date;

  - 1968 Treaty on the Non-Proliferation of Nuclear Weapons, was succeeded to on 1 January 1993 and entered into force 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, was succeeded to on 2 December 1992 and entered into force on 1 January 1993;

  - 1979 Convention on the Physical Protection of Nuclear Material, was succeeded to on 24 March 1993 and effectively entered into force on 1 January 1993;

  - 1986 Convention on Early Notification of a Nuclear Accident, was succeeded to 24 March 993 and effectively entered into force on 1 January 1993;

  - 1986 Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency, was succeeded to on 24 March 1993 and effectively entered into force on 1 January 1993;

  - 1994 Convention on Nuclear Safety, was approved on 18 September 1995 and entered into force on 24 October 1996 ;

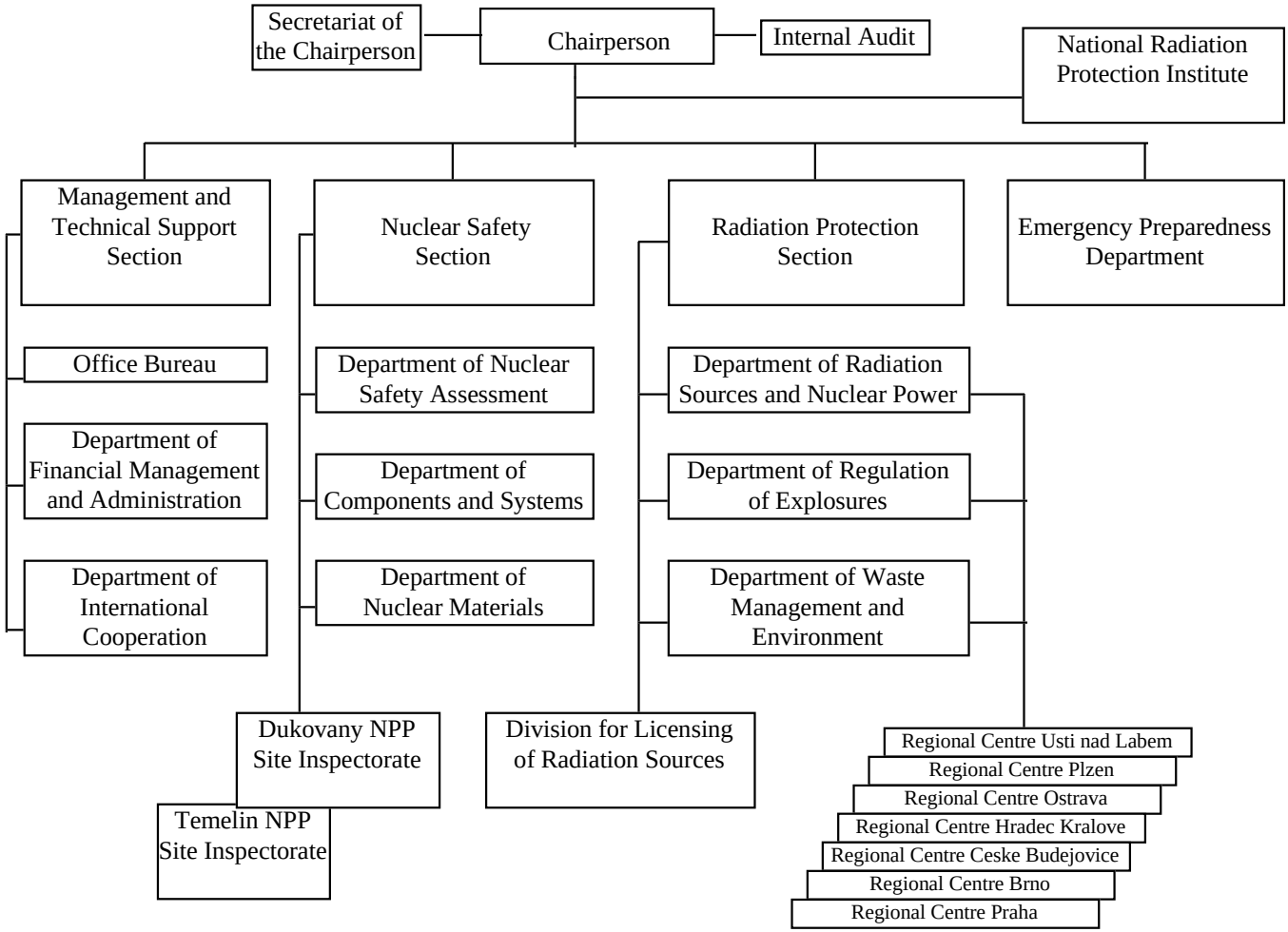
  - 1996 Comprehensive Nuclear Test Ban Treaty was signed on 12 November 1996.

  - 1997 Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management was signed on 30 September 1997.

Membership in Nuclear Organisations

The Czech Republic joined the International Atomic Energy Agency (IAEA) on 27 September 1993 and joined the OECD/NEA as a member in 1996. The 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 (SONS)



ESTONIA

Introduction

There are no nuclear power plants in Estonia. There are, however, two partly decommissioned nuclear reactors and nuclear waste depositories 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. In Sillamäe (north-east Estonia) there is a depository of uranium mining and milling wastes, 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 depository is used by SILMET a.s. for storage of their wastes.

Estonia nevertheless might consider the option of nuclear energy after the year 2000. Research, including a cost analysis, will be conducted to study the feasibility of building a nuclear power facility in Estonia.

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 are the two bodies with primary responsibility over nuclear and radiological issues. However, the governmental body with primary responsibility for radiation protection, and which has inspection and control rights, is the Estonian Radiation Protection Centre (ERPC). The Centre, founded in 1996, reports to the Ministry of the Environment. It monitors compliance with official documents issued by the Government and supervises all radiological activities including issue of licences and regulation of surrounding radiation levels.

By Order of 10 May 1995, the Government of Estonia formed a state-owned company, ALARA Ltd. This company is the new operator of the Paldiski facilities and is also responsible for radioactive waste management in Estonia.

Legislation in Force

- **Radiation Act**

On 8 May 1997 the President of Estonia promulgated the Radiation Act, which had been passed by the Parliament on 23 April 1997 (*Official Gazette* No. 37/38, 16 May 1997). This Act is to be the principal legal instrument in the field of radiation protection of workers, the public and the environment.

The Radiation Act is based on concepts, principles and dose limits stipulated in the International Basic Safety Standards or BSS (IAEA Safety Series No. 115-1) and the EU Directive 96/29/Euratom. Accordingly, the basic principles incorporated in the Act are as follows:

- justification of practices;
- optimisation of protection and safety;
- limitation of individual doses;
- adoption of justified and optimised interventions;
- primary responsibility of the legal person (licensee); and
- authorisation of practices.

The Radiation Act defines the institutional framework for, and establishes the rules applicable to, the use of ionising radiation sources, the storage of 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, import and export of such wastes and the prohibition against importing radioactive waste for final disposal purposes.

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 wastes. In this way the Act constitutes a legal basis for the implementation of safeguards and other activities for enforcing the provisions of international conventions on nuclear safety. The Act authorises the Parliament (*Riigikogu*) 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 Government plans to draw up a list of conditions which must be satisfied in order to obtain a licence, such as safety requirements and levels of radiation emitted. It authorises the Estonian Radiation Protection Centre to issue licences under the control of the Ministry of the Environment. The Act defines the owner of the licence for the activity involving ionising radiation or the user of a radiation source within the scope of his work as the party liable. Such person must guarantee radiation safety and must be able to repair any damage caused.

The Centre is also empowered under the Act to inspect activities and sources of radiation exposure and to maintain dose and source data registries. 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, safety requirements for non-ionising radiation, etc. Initiatives to this effect have already been taken.

- **Decree on the Issue of Licences for Radiation Practice**

The Decree on the establishment of the order for issuing licences for radiation practices adopted on 6 August 1997 (Decree No. 58 of the Minister of Environment, Riigi Teataja Lisa, No. 118, 6. August 1997, 4554) establishes the detailed requirements pertaining to applicants, and to the Estonian Radiation Protection Centre, on issuing licences for activities involving radiation. The ERPC is authorised to assess all applications for permission to conduct practices involving radiation and to issue licences therefor for a time period of up to five years. Model application forms and standard licence forms are introduced.

- **Act on Export and Transit of Strategic Goods**

The Act on export and transit of strategic goods, which entered into force on 28 April 1994, makes licences for the export or transit of such goods mandatory. Nuclear technology, related materials and facilities, nuclear waste and uranium ores are included in this category. Licences are issued by an Interdepartmental Commission set up for this purpose.

- **Other relevant legislation**

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 provide that all persons are entitled 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 rights and obligations as regards compensation in the context of environmental damage.

Draft Legislation and Regulations

- **Decree on Registration of Radiation Sources**

The Minister of the Environment is currently drafting a new Decree on the Registration of Radiation Sources. The Decree will regulate the process of registering radiation sources by the ERPC, will establish a national radiation source register and will introduce detailed requirements for licensees on their registration. The register will be held by the ERPC.

- **Decree on Radiation Safety Factors**

Another Decree under preparation is the Decree of the Minister of the Environment on Radiation Safety Factors. This Decree will enforce radiation values and tissue weighting factors, as set out by the International Commission on Radiological Protection, the order of verification of dose limits for radiation workers and for the public, the committed dose per unit via ingestion and inhalation, limits on intake and exposure of radon and thoron progeny, guidelines for intervention in emergency exposure situations, and action levels for naturally occurring radionuclides in chronic exposure situations. All the basic principles, terms and levels stipulated in the relevant IAEA Basic Safety Standards and EU Directives will be incorporated. This Decree is at an advanced stage of preparation.

- **Decree on Exemption Levels for Radiation Sources**

This Government Decree will enact exemption levels for radiation source concentrations and activity levels. Clearance levels for the sources, radioactive materials and radioactive wastes will also be included. This Decree is at an advanced stage of preparation.

- **Decree on Safe Transport of Radioactive Materials**

This Government Decree will enact rules for the safe transport of radioactive materials, including radioactive wastes. The rules will harmonise existing local transport legislation with the requirements of IAEA Basic Safety Standards and EU Directives. The Decree will contain general provisions for radiation safety and emergency response; activity and fissile material limits; requirements for packaging, marking, labelling, transport and storage in transit; test procedures; administrative requirements; documentation. This Decree is at an advanced stage of preparation.

- **Decree on Radioactive Waste Management**

Finally, another Government Decree under preparation in Estonia will deal with radioactive waste management. This Decree will impose detailed requirements for radioactive waste management, including storage, disposal and facilities therefor. The requirements of the recent IAEA RADWASS Safety Standards will be included to the extent appropriate for activities involving radioactive waste. For this reason, special attention is being paid to requirements and responsibilities for uranium mining and milling wastes and to the wastes arising from the decommissioning of nuclear facilities. The Decree will include requirements on classification of wastes, clearance levels and safety criteria in the siting, design and operation of waste management facilities.

International Conventions

- **Nuclear Third Party Liability**

  – Estonia acceded to the 1963 Vienna Convention 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 on 9 August 1994.

  – Estonia acceded to the 1988 Joint Protocol on 9 May 1994, and it entered into force on 9 August 1994.

- **Other Conventions**

  – 1968 Treaty on the Non-Proliferation of Nuclear Weapons was acceded to on 7 January 1992 and entered into force on 31 January 1992;

  – 1979 Convention on the Physical Protection of Nuclear Material was acceded to on 9 May 1994 and entered into force on 9 June 1994;

  – 1986 Convention on Early Notification of a Nuclear Accident was acceded to on 9 May 1994 and entered into force on 9 June 1994;

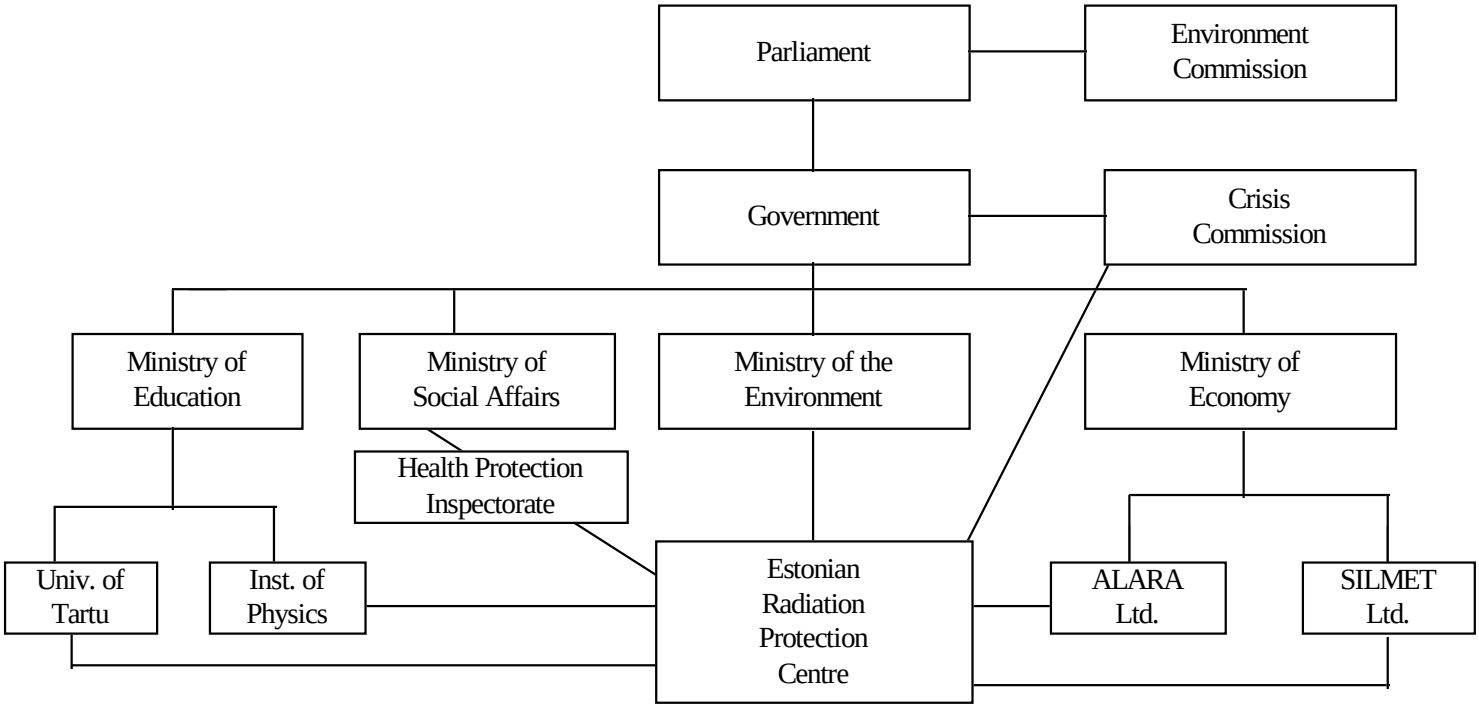
  – 1986 Convention on Assistance in Case of a Nuclear Accident or Radiological Emergency was acceded to on 9 May 1994 and entered into force on 9 June 1994;

  – 1996 Comprehensive Nuclear Test Ban Treaty was signed on 20 November 1996.

Membership in Nuclear Organisations

Estonia joined the International Atomic Energy Agency (IAEA) on 31 January 1992.

ESTONIA
Institutions in the Field of Nuclear Safety and Radiology



HUNGARY

Introduction

At present, there is one nuclear power station in Hungary. It is located at Paks on the Danube and has four units with a capacity of 1 840 MWe.

The *Püspökszilagy* waste management and disposal centre is the only facility in Hungary which provides final disposal for low and intermediate level waste produced by industry, medicine, research etc. The Paks nuclear power plant transported to this disposal centre solid, low level waste and in return it enlarged the original capacity of the repository. The repository was opened by the Hungarian Atomic Energy Commission *(Országos Atamenergia Bizottság)* (HAEC) in 1976 and is now operated by the State Public Health and Medical Officers' Service *(Allami Nepegészségûgyi és Tisztiorvosi Szolgálat)* of the Ministry of Public Welfare. With storage space in its spent fuel pools running low, and future acceptance of spent fuel by Russia uncertain, the Paks plant awarded a contract for the construction of a modular vault dry storage system. The HAEC issued a licence in February 1995 for its construction and in February 1997 for the commissioning of the 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. A site for a high-level waste repository in the Mecsek mountains is also under study.

The Hungarian Electricity Works Co. Ltd. *(Magyar Villamos Müvekreszvenytarsag)* is the Hungarian national utility, and is owner of the Paks nuclear power plant.

Competent Nuclear Authorities

Under the 1996 Act on Atomic Energy No. CXVI, the authority to implement the Government's responsibilities in the field of nuclear energy is vested in the Hungarian Atomic Energy Commission (HAEC) and the Hungarian Atomic Energy Authority (*Országos Atomenergia Hivatal*) (HAEA), as well as in the Ministers concerned. The HAEC addresses the development of policy as well as overall co-ordination and monitoring of activities in the nuclear field. The President of the HAEC is appointed by the Prime Minister, and is a member of the Government. The members of the HAEC are senior officials of the Ministries and central public administration organisations performing regulatory tasks pursuant to the Act. Thus, HAEC members are appointed by the Ministers of the Interior, Agriculture, Defence, Industry, Trade and Tourism, Environmental Protection and Regional Development, Transportation, Communication and Water Management, Foreign Affairs, Culture and Public Education, Public Welfare, Finance and the Minister directing the National Security Agencies, the President of the Hungarian Mining Authority and the President of the Hungarian Academy of Sciences, in agreement with HAEC's President and the Director General of the HAEA. The President of the HAEC 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 specified under the Act and regulations. Radiation safety, however, is under the responsibility of the Minister of Public Welfare, in keeping with the traditional system of separation of responsibilities in the field.

The Director General and the Deputies of the HAEA are appointed by the Prime Minister. The Government exercises supervision over the HAEA through the President of the HAEC. 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 contains two directorates: the Nuclear Safety Directorate and the General Nuclear Directorate.

The responsibilities of the HAEA and HAEC have been specified in Government Decree No. 87/1997 on the Duties and Scope of Authority of the HAEC and on the Scope of Duty and Authority, and Jurisdiction of Imposing Penalties of the HAEA, which took effect as of 1 June 1997. It implements the provisions of the Atomic Energy Act, defining the status of the HAEC and HAEA, and provides them with regulatory independence.

To ensure proper scientific support for the HAEA and the HAEC, a Scientific Board, consisting of no more than 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, in the first instance, 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. This is also specified in the Government Decree on the Procedures of the HAEA in Nuclear Safety Regulatory Matters, which defines the responsibilities of the Directorate (Decree No. 108/1997 (VI.25) Korm.). A permit from the Nuclear Safety Directorate is required for siting, construction and enlargement, commissioning, operation, modification and permanent shutdown and decommissioning of nuclear facilities. Apart from issuing standard and regulatory permits, the Nuclear Safety 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 at the beginning of 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 Accounting 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 divisions responsible for research and development and governmental relations, respectively.

The following Ministers have particular responsibilities under the Act:

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

The Minister for the Interior, through the offices of the National Police Force and 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 for Agriculture, 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 for Industry, Trade and Tourism, through the Hungarian Geological Survey, deals with licenses relating to geology and is generally responsible for the inspection of radioactivity of raw materials used or imported for the production of building materials.

The Minister for Transport, Communication and Water Management is responsible for matters associated with water utilisation, water base protection and mitigation of water pollution, as well as aspects related to traffic and transport.

The Minister for Environmental Protection and Regional Development is competent in the fields of environmental protection, nature conservation and water quality protection.

The Minister for Defence is responsible for the control of handling of 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 personnel and of the armed forces for nuclear emergency preparedness.

The Minister for Culture and Public 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 new Atomic Energy Act requires that the safe application of atomic energy be promoted by the co-ordination of research activities. HAEA has the task of evaluating and co-ordinating these activities. The Nuclear Safety Directorate of the HAEA maintains close contact with organisations which 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.

Legislation in Force

- **Atomic Energy Act**

On 10 December 1996, the Hungarian Parliament adopted the new Atomic Energy Act No. CXVI*, which replaced the Atomic Energy Act of 1980. The Atomic Energy Act of 1996, while

* The English translation of the complete text of this law is reproduced in the Supplement to *Nuclear Law Bulletin* No. 60 (December 1997).

preserving the essential elements of the 1980 Atomic Energy Act, aims to conform to recent international rules and recommendations as issued by the IAEA and the OECD/NEA.

The legal regime applicable to nuclear activities in Hungary is set down in the Atomic Energy Act. It entered into force on 1 June 1997, with the exception of Articles 62-64 (concerning the Central Nuclear Financial Fund), whose date of entry was specified to be 1 January 1998. As with the 1980 Atomic Energy Act, different Ministries and authorities are entrusted with the implementation of the Act in their respective fields of jurisdiction by means of separate regulations. Until new regulations are brought into effect the existing regulations continue to apply.

The Atomic Energy Act is stated to apply 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 detrimental 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 created, do not qualify as hazardous to human life or 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 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 moment when liability is transferred between operators is required to be stated in the contract for shipment. The exemptions are limited to external causes (armed conflict, hostilities, civil war, insurrection) or a grave natural disaster of an exceptional character or to damage suffered by an injured party which was caused by the injured party's gross negligence, or resulted from wilful conduct of the injured party which was expressly aimed at creating the danger.

The liability of the licensee is limited to 100 million Special Drawing Rights (SDRs) for each nuclear accident arising at a facility, and 5 million SDRs 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 300 million SDRs. Payment of compensation will be effected in Hungarian currency, based on the official exchange rate with 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 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 the Hungarian 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 Hungarian Pool provides third party liability cover for the Paks NPP in accordance with the Atomic Energy Act. Property insurance is supposed to be provided as well in the future.

As required by the new Act on Atomic Energy, a Central Nuclear Financial Fund will be established (as of 1 January 1998) to manage radioactive waste. The Fund will be managed by the HAEA as a separate State fund (pursuant to Act 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 will be 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 should be taken into account when pricing electricity.

- **Ordinances Concerning Nuclear Energy Law**

Under the 1996 Atomic Energy Act, the following regulations were issued:

Government Decree No. 87/1997 concerns the Duties and Scope of Authority of the HAEC and the Scope of Duty and Authority, and Jurisdiction of Imposing Penalties of the HAEA and took effect as of 1 June 1997. It implements the provisions of the Atomic Energy Act, defines the status of the HAEC and HAEA and provides them with regulatory independence.

Government Decree No. 108/1997 on the Procedures of the HAEA in Nuclear Safety Regulatory Matters, which defines the responsibilities of the HAEA Nuclear Safety Directorate.

Ordinance No. 14 of 3 September 1997 of the Minister of Transport, Communication and Water Management specifies the conditions applicable to all modes of transport of radioactive substances, and Ordinance No. 13 of 3 September 1997 of the Minister of Transport, Communication and Water Management contains the rules for safe transport by rail of spent nuclear fuel.

Until the new regulations enter into force, regulations issued under the 1980 Atomic Energy Act continue to apply, such as Ordinance No. 7 of 20 July 1988 of the Minister of Public Welfare, containing the radiation protection rules applicable to all activities involving the use of nuclear energy. In the near future, this Ordinance will be replaced by a new regulation that will be in accordance with the latest recommendations of the International Commission for Radiation Protection and the basic standards recommended by competent intergovernmental organisations.

Draft Regulations

Further new regulations under the 1996 Atomic Energy Act are under preparation in the fields of, *inter alia*, nuclear emergency planning and preparedness, physical protection, environmental protection.

International Conventions

- **Nuclear Third Party Liability**

  - Hungary acceded to the 1963 Vienna Convention on 28 July 1989, which entered into force on 28 October 1989; Hungary signed the Protocol to Amend the Vienna Convention on 29 September 1997.

- Hungary acceded to the 1988 Joint Protocol on 26 March 1990, which entered into force on 27 April 1992.

- **Other Conventions**

  - 1960 Convention concerning the Protection of Workers against Ionising Radiation was ratified on 8 June 1969 and entered into force on the same date;

  - 1963 Treaty Banning Nuclear Weapons Tests in the Atmosphere, in Outer Space and under Water, was signed at 8 August 1963;

  - 1968 Treaty on the Non-Proliferation of Nuclear Weapons was ratified on 27 May 1969 and entered into force on 5 March 1970;

  - 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 was ratified on 13 August 1971 and entered into force on 18 May 1972;

  - 1979 Convention on the Physical Protection of Nuclear Material was ratified on 4 May 1984 and entered into force on 8 February 1987;

  - 1986 Convention on Early Notification of a Nuclear Accident was ratified on 10 March 1987 and entered into force on 10 April 1987;

  - 1986 Convention on Assistance in Case of a Nuclear Accident or Radiological Emergency was ratified on 10 March 1987 and entered into force on 10 April 1987;

  - 1994 Convention on Nuclear Safety was ratified on 18 March 1996 and entered into force on 24 October 1996;

  - 1996 Comprehensive Nuclear Test Ban Treaty was signed on 25 September 1996; and

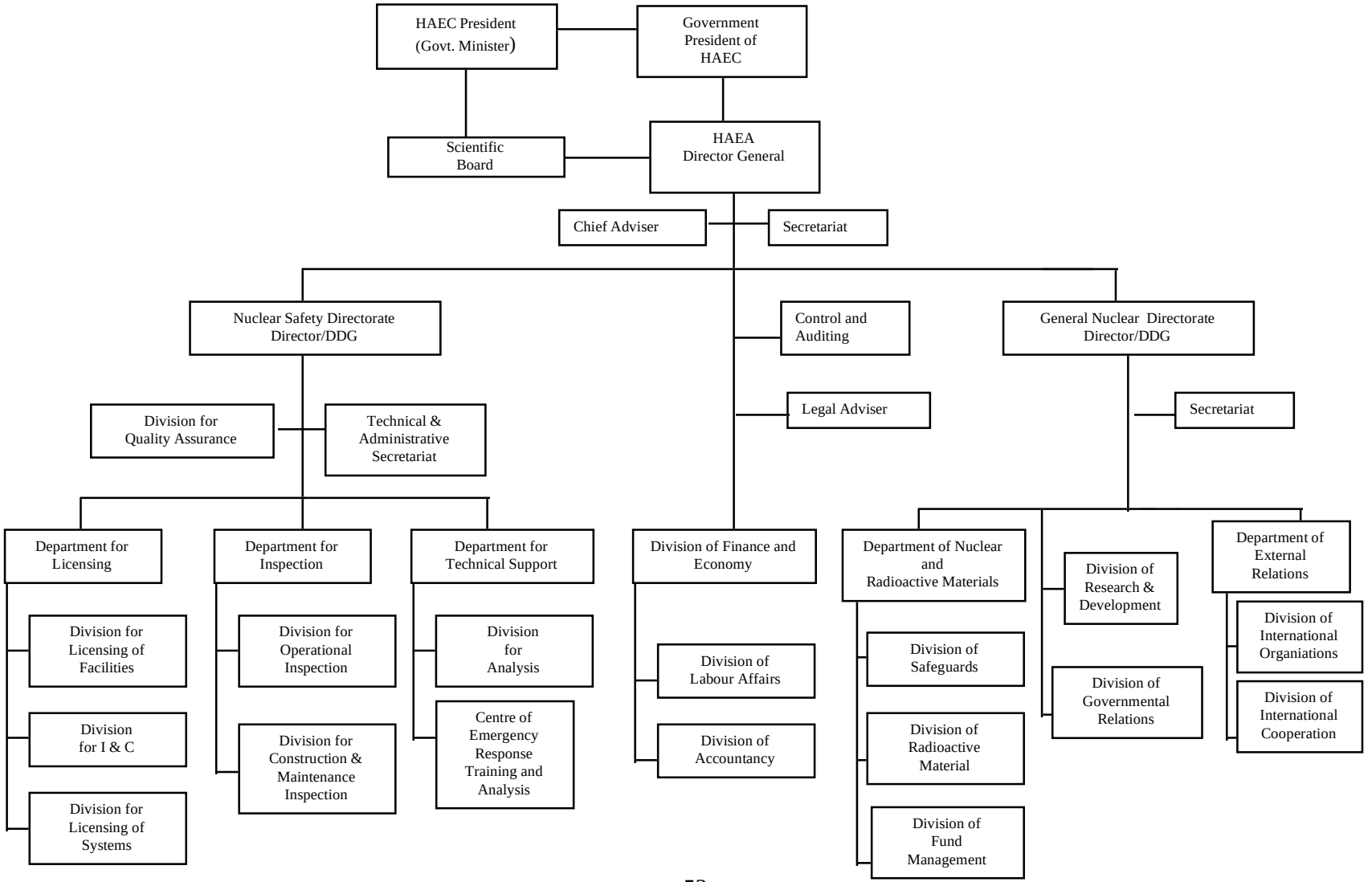
  - 1997 Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management was signed on 29 September 1997.

Membership in Nuclear Organisations

Hungary joined the International Atomic Energy Agency (IAEA) on 8 August 1957 and 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

Hungarian Atomic Energy Commission (HAEC) and Hungarian Atomic Energy Authority (HAEA)



KAZAKSTAN

Introduction

Kazakstan has a uranium extraction and ore production industry consisting of uranium geological research agencies, several uranium mines (Tselinny mine, Ulba metallurgical, Irtysh chemical-metallurgical factory, Caspian mine and metallurgical combine and ores companies), two facilities for the production of uranium oxide located in Aktau and Stepnogorsk, and one facility for the production of fuel pellets in Ust-Kamenogorsk.

A fast breeder reactor, 135 MWe BN-350, at Aktau is used as a water desalination plant, as well as for the production of electricity.

In addition, Kazakstan operates four research reactors (three 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 rehabilitation of sites contaminated by previous military and civilian nuclear activities.

The Government adopted a resolution in October 1995 to develop nuclear energy in Kazakstan and to build a latest-generation nuclear power plant at Semipalatinsk. The initial phase of construction of the new nuclear power plant, to be built in co-operation with Russia, commenced in July 1997.

Competent Nuclear Authorities

The Kazakstan Atomic Energy Agency (KAEA) shares responsibility with several Ministries for activities in the field of nuclear energy. The 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. Since 1996, it has been controlled by the Ministry of Science.

The Government has empowered the Agency to:

- 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 Ecology and Natural Resources is responsible for the protection of the environment against radioactive contamination. It co-ordinates the network which monitors the level of radiation in Kazakstan and carries out environmental impact assessments of projects.

The Ministry of Education, Culture and Health, provides medical services necessary for the protection of the public and employees at risk. It is responsible for regulating and inspecting 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 Science is responsible for the co-ordination of all scientific activities in the fields 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 Industry, the Ministry of Agriculture, and other research institutes.

Lastly, the State Committee 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 State Committee, is responsible for regulating the use of industrial equipment.

Legislation in Force

- **Atomic Energy Law**

In April 1997, the Law on the Use of Atomic Energy was adopted. The Act defines nuclear energy concepts, sets out a structure for 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.

It authorises the Government to designate those State bodies which are to regulate 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 Act;
- the issue of licenses for nuclear activities and 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, maintenance 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 nuclear installations and accounting and control of ionising radiation sources. The provisions on the transportation, export and import of nuclear materials define technology and equipment widely, 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 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 draft Law on Radiation Protection: it is not compensation *per se*, but rather a premium for incurring a certain risk.

- **Regulations of the Atomic Energy Agency**

The Atomic Energy Agency has prepared two regulations which provide guidance on the use of nuclear energy.

The first Regulation, adopted in 1994 by decision of the Agency's Director General, establishes conditions for the physical protection of nuclear materials on site 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 Agency. Guidelines published by decision of the Agency's Director General in 1994 are intended to help operators establish their own physical protection rules. They provide explanations of the Regulations and the conditions set forth therein.

The second Regulation, on the use of atomic energy, radioactive waste management and spent nuclear fuels, was adopted by the Government on 11 April 1994 (Resolution No. 364). 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.

- **Law on Export Control of Armaments**

The Law on Export Control of Armaments, Military Equipment and Dual-Use Products, of 16 June 1996, was drafted by a group of experts from various ministries and agencies, including members of KAEA. The Law is intended to regulate the export of nuclear materials of a sensitive nature. The regulations are intended 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.

Draft Legislation and Regulations

Two pieces of legislation are currently being prepared:

– 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 from the harmful consequences 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.

- The draft Law on Radiation Safety of the Public reflects the main aspects of national policy regarding radiation safety of the public. This Law aims to protect the public and the environment from adverse effects of ionising radiation, and, in particular, to protect the interests of present and future generations. It deals with the rights of individuals in the context of such safety, the duties of users of ionising radiation sources and the responsibilities of State bodies. The basic principles of radiation safety include the principles of limitation, justification and optimisation, aiming to ensure a reasonable, minimum and responsible use of ionising radiation.

International Conventions

- 1968 Treaty on the Non-Proliferation of Nuclear Weapons was acceded to on 14 February 1994 and entered into force on the same date;

- 1994 Convention on Nuclear Safety was signed on 20 September 1996;

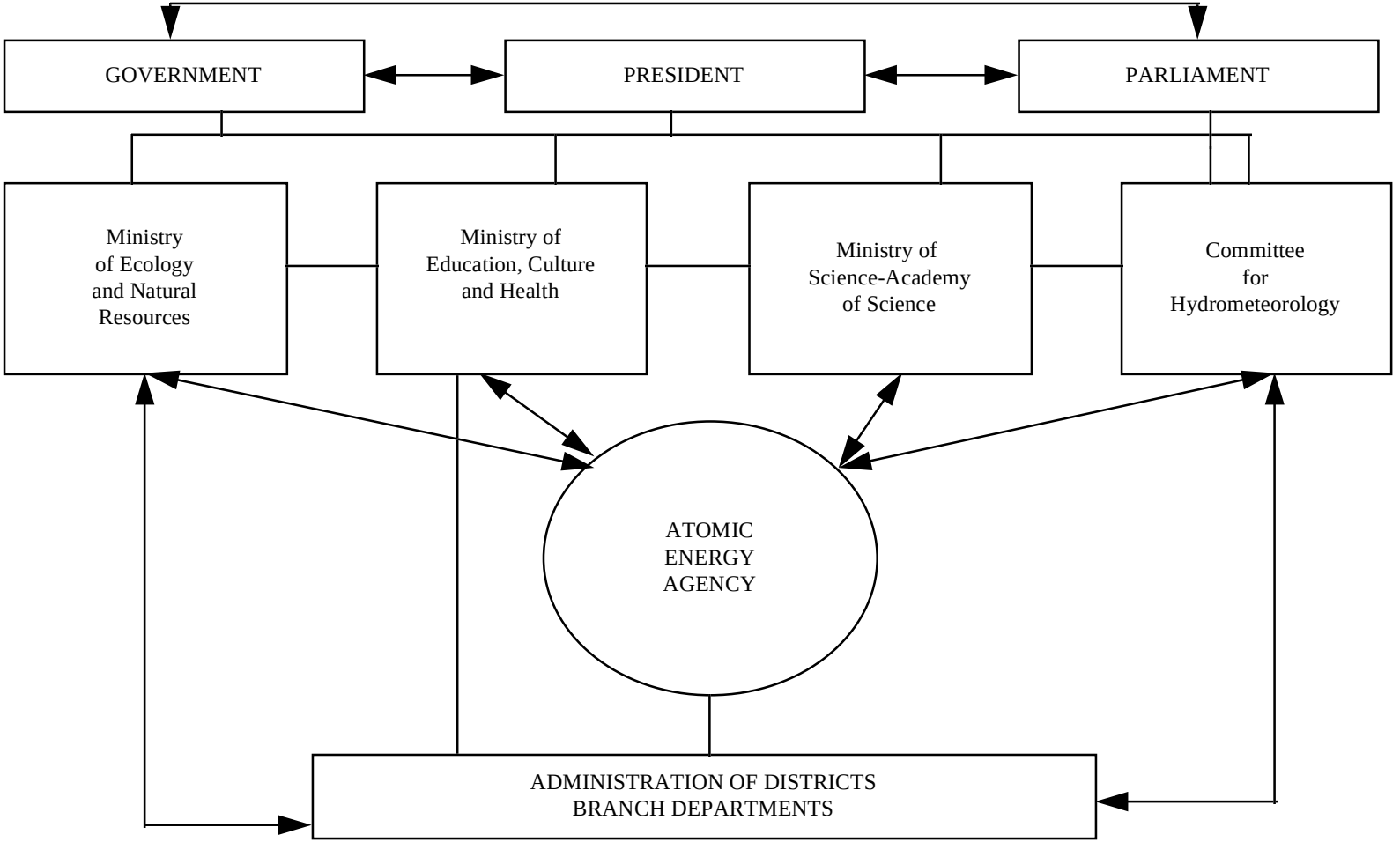
- 1996 Comprehensive Nuclear Test Ban Treaty was signed on 30 September 1996; and

- 1997 Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management was signed on 30 September 1997.

Membership in Nuclear Organisations

Kazakstan joined the International Atomic Energy Agency (IAEA) on 14 February 1994. The Kazakh Mangyshlak Atomic Energy Complex is a member of the World Association of Nuclear Operators (WANO).

KAZAKSTAN
Regulatory Bodies in the Field of Radiation Safety



LATVIA

Introduction

There are no nuclear power plants in operation or under construction in Latvia. There is, however, an IRT-type research reactor at Salaspils in the Riga region. It was commissioned in 1961 and in 1995 the Cabinet of Ministers asked the Nuclear Research Centre to start preparations for decommissioning. The estimated last day of operations is 1 July 1998.

Competent Nuclear Authorities

The Ministry of Environmental Protection and Regional Development and the Ministry of Welfare are the two regulatory bodies with jurisdiction in the nuclear field.

The Ministry of Environmental Protection and Regional Development is responsible for the regulation of all uses of ionising radiation sources (with the exception of applications in the field of medicine) and for international co-operation in the nuclear field.

The mandate of the Radiation and Nuclear Control Division (also referred to as Radiation and Nuclear Safety Inspectorate) of the Environmental State Inspectorate which is part of the Ministry, is as follows:

- to authorise activities involving the use of ionising radiation;
- to monitor compliance with nuclear safety regulations and standards;
- to authorise the transport of nuclear and radioactive materials;
- to establish a State system of accounting and control of nuclear materials; and
- to organise and update the State data base for radioactive materials and ionising radiation sources.

The Environmental Data Centre, which is also under the authority of the Ministry of Environmental Protection and Regional Development, is responsible for the early warning system in case of a nuclear accident and for laboratory measurements and data processing.

The Ministry of Welfare is responsible for radiation protection in the medical field (diagnostics, radiation applications, accelerators, etc.). The Environmental Health Centre and the Radiology Centre are under the authority of this Ministry.

The Radiology Centre is responsible, *inter alia*, for the licensing of X-ray applications in medicine and for dosimetry in general. The Latvian Development Agency (*Latvijas Athistibas Agentura*) is responsible for licensing, export, import and transit of “strategic materials”.

Latvia furthermore has created a Radioactive Waste Management organisation, the State Enterprise *Radons*, which is entirely state-owned. It is responsible for funding radioactive waste management by the introduction of an import duty for radioactive materials. In addition, it manages a Guarantee Fund for financing the decommissioning of nuclear facilities. Under the new licensing regulations the Environmental Protection Fund of the Ministry of Environmental Protection and Regional Development will manage the funding generated by import duties.

Legislation in Force

- **Radiation Protection and Nuclear Safety Act**

The Act on Radiation Protection and Nuclear Safety* which was adopted and published on 1 December 1994, entered into force on 1 January 1995. The Act governs all activities involving radioactive or nuclear materials and all sources of ionising radiation.

It establishes the basic principles of radiation and nuclear safety (justification, optimisation and limitation) and also contains provisions on nuclear third party liability. The Act provides for a two-pronged system of licensing, differentiating between licences for commercial operations and permits for non-commercial operations.

Operators of nuclear installations must provide all necessary information to the Inspectorate showing that safety measures are, in fact, being applied. The Inspectorate may then deliver licences or permits, as the case may be. The Inspectorate may at any time withdraw or revoke licences or permits if radiation protection or nuclear safety requirements are not met.

Latvia became a Party to the 1963 Vienna Convention on Civil Liability for Nuclear Damage and to the 1988 Joint Protocol relating to the Application of the Vienna Convention and the Paris Convention. The provisions of the Act on Radiation and Nuclear Safety of 1994 concerning nuclear third party liability are, therefore, consistent with the regime of the Vienna Convention:

- the maximum amount of liability for nuclear damage is set at the minimum amount provided by the Vienna Convention (US$5 million, 1963 value);

- the operator is exclusively liable for nuclear damage originating in his installation (strict liability); and

- the major portion of compensation will be provided by the State, while the Nuclear Research Centre (operator of the *Salaspils* research reactor) and the State Enterprise, *Radons*, will cover liability up to 1 million Latvian lats (1 Special Drawing Right is the equivalent of 0.7997 LVL) through an insurance system.

Lastly, two regulations have been adopted pursuant to the Radiation and Nuclear Safety Act: the Radiation Protection Regulation Concerning Licences for Activities Dealing with Radioactive Substances and Other Ionising Radiation Sources (1996) and the Basic Regulations for Protection Against Ionising Radiation (1997).

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* The full text in English of the Radiation Protection Act was reproduced in the Supplement to *Nuclear Law Bulletin* No. 55 (June 1995).

- **Radiation Protection Regulations Concerning Licences for Activities Dealing with Radioactive Substances and Other Ionising Radiation Sources (1996)**

On 20 June 1996 the Cabinet of Ministers of Latvia adopted the Radiation Protection Regulations on Licences and Permits for Activities dealing with Radioactive Substances and Other Ionising Radiation Sources, which entered into force on 1 September 1996. They set out the requirements for licence applicants, the liability limits for different types of facilities (X-ray equipment, research laboratories, etc.) and aim to establish strict control over all such activities. The agencies with the authority to issue licences are the following:

- the Environmental Health Centre, under the authority of the Ministry of Welfare, for medical applications, with the exception of X-ray equipment;

- the Radiology Centre, under the authority of the Ministry of Welfare, for X-ray equipment;

- the Radiation and Nuclear Safety Inspectorate of the Ministry of Environmental Protection and Regional Development, for all other activities which fall within the scope of the law; and

- the Department of Export and Import Control of the Latvian Development Agency, for export, import and transport licences for nuclear materials.

In order to obtain a licence, the applicant must complete a special declaration form which, along with a number of other documents, is reviewed by the relevant agency. Once delivered, a licence is valid for a period of three years. However, any licence may be subject to revocation should a violation of safety standards be detected during inspection. Upon expiration, the licence is not automatically renewed, and a new application must be made.

The above Licensing Regulations also introduce several other requirements for licence applicants, *inter alia*, the requirement for a public hearing for a licence for a research reactor or a radioactive waste repository. The Regulations 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. Secondly, they establish a new mechanism for supplementary financing of radioactive waste management by the imposition of an import duty on all radioactive materials. This import duty will be used partly by local municipalities, partly for investments in infrastructure for radioactive waste management, and finally for decommissioning funds.

- **Regulations for Protection Against Ionising Radiation (1997)**

On 12 August 1997, the Cabinet of Ministers adopted the Regulations for Protection Against Ionising Radiation. The Regulations, which are based on the IAEA and European Union Basic Safety Standards, also take into account Euratom Directives 84/466, 87/600, 87/3954, 89/618 and 90/641 and several IAEA Recommendations.

The first part of the Regulations is devoted to the definition of terms. The second part defines the scope of the Regulations and sets up several requirements in the field of prohibited applications of ionising radiation and nuclear safety culture. The third part deals mainly with the separation of

responsibilities between the various bodies and persons involved in the field, such as the differing responsibilities of owners of ionising radiation sources and regulatory bodies.

The Regulations are broad in scope and cover numerous activities: manufacturing, import, export, transport, trade and use of all radioactive substances and sources of ionising radiation in excess of 5 keV. They aim to protect the public, employees and the environment against the harmful effects of ionising radiation emitted from any source and to ensure the safe use of radiation sources.

The appropriate agencies enforce compliance with these Regulations by the issue of licences, *a priori* control and by inspection procedures, *a posteriori* control. The agencies with jurisdiction are the Radiation and Nuclear Safety Inspectorate, the Environmental Health Centre and the Radiology Centre.

The Regulations deal with the early notification of nuclear accidents, taking into account the two 1986 IAEA Conventions on Early Notification and Assistance as well as the European Union regulations and Latvia's international obligations.

Draft Legislation and Regulations

The Border Guards of the Latvian Ministry of Defence have proposed several minor changes to the Law of Radiation Protection and Nuclear Safety. They encompass the introduction of a new term in Section 1, entitled "Undeclared Sources of Ionising Radiation" and changes to Article 12 on Metrology and Methodology concerning the responsibility of the Ministry of Environmental Protection and Regional Development and the Radiation and Nuclear Safety Inspectorate. These amendments have already been approved by the Cabinet of Ministers and by the Parliament on first reading and are expected to be adopted in 1998.

Finally, on 10 September 1996, the Cabinet of Ministers adopted regulations on the measurement of radiation levels for goods crossing the border. This new proposal is based on the general plan to establish a sort of border police with responsibility for customs control and immigration. The regulations empower border guards to extend their activities to the dosimetric control of goods passing the border.

International Conventions

- **Nuclear Third Party Liability**

  - Latvia acceded to the 1963 Vienna Convention on 15 March 1995, and it entered into force on 15 June 1995.

  - Latvia acceded to the 1988 Joint Protocol on 15 March 1995, and it entered into force on 15 June 1995.

- **Other International Conventions**

  - 1960 Convention concerning the Protection of Workers against Ionising Radiation was ratified on 8 March 1994 and entered into force on the same date;

- 1968 Treaty on the Non-Proliferation of Nuclear Weapons was acceded to on 31 January 1992 and entered into force 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 was ratified on 24 March 1992 and entered into force on the same date;

- 1986 Convention on Early Notification of a Nuclear Accident was acceded to on 28 December 1992 and entered into force on 28 January 1993;

  1986 Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency, acceded to on 28 December 1992 and entered into force on 28 January 1993;

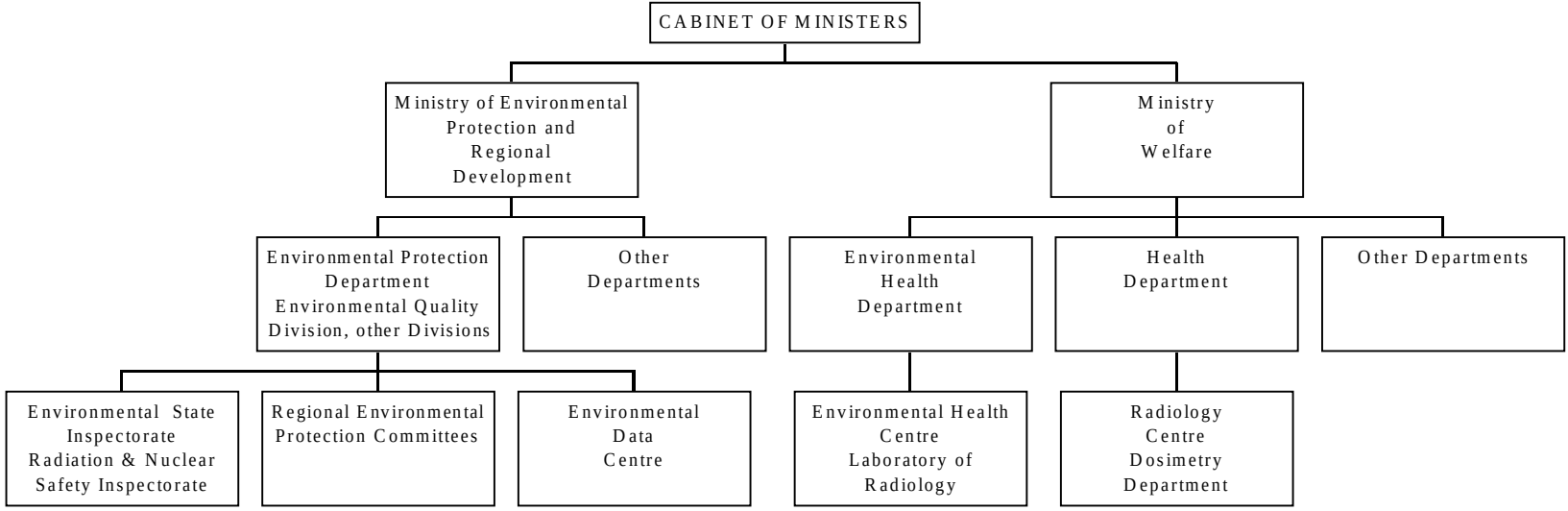
- 1994 Convention on Nuclear Safety was acceded to on 25 October 1996 and entered into force on 23 January 1997; and

- 1996 Comprehensive Nuclear Test Ban Treaty was signed on 24 September 1996.

Membership in Nuclear Organisations

Latvia joined the International Atomic Energy Agency (IAEA) in 1997.

LATVIA
Competent Authorities for Nuclear Energy



LITHUANIA

Introduction

Lithuania possesses only one nuclear power plant, the Ignalina NPP, situated in north-east Lithuania near the borders of Latvia and Belarus. The Ignalina NPP operates two similar units of RMBK-1500 model reactors, Unit 1 and Unit 2 of 1300 MWe each, which were commissioned in December 1983 and August 1987 respectively. They provide approximately 85 per cent of the electricity produced in Lithuania.

Lithuania has a repository for low and intermediate level radioactive waste at Maisiogala, located 30 km. outside Vilnius. The repository was closed in 1989. The construction of an interim dry storage facility is planned on the Ignalina NPP site for the storage of spent fuel. Currently all radioactive waste is collected and brought to the Ignalina NPP for temporary storage.

The Lithuanian State Power System (formerly LSPS), now a Joint Stock Company, *Lietuvos Energija*, is the national utility responsible for the generation and distribution of electricity other than that produced by the Ignalina NPP.

Competent Nuclear Authorities

Several Ministries are responsible for regulating the use of nuclear energy: the Ministry of Economy, the Ministry of Health, the Ministry of Environmental Protection and the Ministry of Internal Affairs.

In 1993, the Ministry of Energy created a subsidiary agency called the Energy Agency. Financed by the Government and reporting directly to the Ministry of Energy, the Agency's mission was to regulate the energy sector. It was responsible for the application of legislation in the field of energy and for the setting up of a national energy program. It was divided into several departments, one of which was devoted solely to nuclear energy.

As of March 1997 the Ministry of Energy has ceased to exist and the newly established Ministry of Economy has assumed all responsibility for nuclear energy management. The Nuclear Energy Division was established to supervise the nuclear energy sector and comprises most of the staff from the former Nuclear Energy Division of the Energy Agency.

There is also a Radiation Protection Centre. This Centre, under the authority of the Ministry of Health, is responsible for the regulation of radiation protection measures in research applications, medicine and other uses of nuclear power. It also regulates radioactive waste produced by research, medicine and industry.

The Ministry of Environmental Protection is responsible for conducting environmental impact assessments, establishing the limits of radioactive emissions into the environment, and relevant licensing procedures. Together with the Nuclear Power Safety Inspectorate (see below) and the Ministry of Health, it is responsible for establishing procedures for the import, export, transit, transportation and

disposal of radioactive materials and waste. It is also responsible with the Ministry of Health for establishing radiation protection standards and monitoring their compliance.

After the re-establishment of its independence, Lithuania set up its own Nuclear Power Safety Inspectorate (*Valstybiné Atominés Energetikos Saugos Inspekgija*, or NPSI) by Government decision of 1 November 1991. The Statute of NPSI was approved by Governmental Decree on 21 October 1992. According to its Statute, NPSI is responsible for all matters related to safety (including radiation safety) at the Ignalina NPP and in the 30 kilometre zone surrounding the plant. The duties of NPSI, which is the nuclear regulatory authority in Lithuania, include:

- drafting and, under the authority of the Government, approving safety standards and rules for the design, construction and operation of nuclear facilities, for storage of nuclear and radioactive materials and for waste disposal;

- ensuring adherence to the requirements set out in licences and safety rules;

- establishing the system of accounting for and control of nuclear materials; and

- issuing licences for the design, construction, operation and decommissioning of nuclear facilities and of their components as well as evaluating the safety of nuclear facilities.

Finally, to assist NPSI in its work, the Government set up the Nuclear and Radiation Safety Advisory Committee (NRSAC) by Decree in May 1993. In July 1997, this Committee was reorganised as the Nuclear Safety Advisory Committee. The Committee's members include environmental and nuclear safety experts from Lithuania as well as advisors from Britain, Germany, Finland, France, Japan, Sweden, Ukraine and the Russian Federation, who assist the Government in resolving problems in the field of nuclear energy. The Committee works with the Ignalina Power Plant management, NPSI and the Ministry of Economy and provides advice on upgrading nuclear safety and on the development of an efficient regulatory infrastructure. It may also advise the Government on the price of electricity or on other specific questions. The Committee receives no funding from the Government; its expenditure is covered by its members and by the Lithuanian Energy Institute.

Finally, the Ministry of Social Security and Labour has responsibilities with respect to verifying compliance with requirements for the safety of personnel at work. The Ministry of Transport participates in the drafting of legislation and regulates training in the field of transport of nuclear and radioactive materials.

The Lithuanian Energy Institute, through its Ignalina Safety Analysis Group, is responsible for conducting safety analyses for the Ignalina Power Plant.

Legislation in Force

- **Law on Nuclear Energy**

On 14 November 1996 the Republic of Lithuania adopted the Law on Nuclear Energy (No. I 1613)*. This Act establishes the rules applicable to the use of nuclear energy, provides a legal framework for nuclear activities and guarantees the peaceful use of nuclear materials and technology.

The objectives of the Law are set out in Chapter I, where it is stated that the Law shall provide a legal basis for activities in the sphere of nuclear energy. It aims to ensure nuclear safety in the peaceful uses of nuclear energy by laying down the principles of State regulation of nuclear safety and radiation protection, conditions for the operation and licensing of nuclear facilities and for the export, import and transportation of nuclear materials, radioactive waste management and for control and physical protection of nuclear materials.

The Law contains a very general definition of nuclear activities and sets out the obligation to obtain a licence from the competent authority in order to engage in such activities. Activities subject to licensing include: the construction and operation of nuclear installations, activities which could affect safety during the operation of the nuclear installation, the decommissioning of nuclear installations, the storage of radioactive waste and other radioactive material, the acquisition, possession or transport of radioactive material, and the import and export of all material belonging to the nuclear energy sector. It further lays down the principles for the creation and management of a decommissioning fund. Implementation of regulations are under preparation (e.g. Regulations on Nuclear Safety of Nuclear Installations adopted by NPSI on 25 July 1997).

As regards nuclear third party liability, the Law adopts the principles contained in the 1963 Vienna Convention on Civil Liability for Nuclear Damage. The provisions in this Law replace Act No. I-134 of 30 November 1993, which implemented the 1963 Vienna Convention and the 1988 Joint Protocol in Lithuania. Act No. I-134 had previously stipulated that the provisions of the Vienna Convention and the Joint Protocol would be directly applicable in Lithuania. The operator is liable for personal injury or property damage. Environmental damage is also taken into account. The operator must acquire and maintain insurance to cover his liability, which is set at the minimum amount set out in the Vienna Convention. The Government will intervene in the event that the funds of the operator are insufficient to cover all damages. The prescription period for filing a claim for compensation is ten years, commencing on the date on which the damage was suffered.

Finally, the Law also contains a chapter specifically devoted to labour relations in the sphere of nuclear energy, providing for additional labour legislation and disciplinary statutes to be applicable to nuclear facilities.

- **Law Regulating the Import, Export and Transport of Goods and Technology**

The Lithuanian Parliament approved on 5 July 1995 Law No. I-1002, regulating the import, export and transport of strategic goods and technology. The aim of this Law is to regulate activities which 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

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* The full text of the Act in English is reproduced in the Supplement to *Nuclear Law Bulletin* No. 60 (December 1997).

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 Environmental Protection, Defence, Finance (Customs) and various other State entities whose activities involve goods subject to control, must consult the Ministry of Economy in the event of a decision concerning goods subject to control.

Draft Legislation and Regulations

Since the Law on Nuclear Energy does not deal with radiation protection issues specifically and provides only general rules on radioactive waste management, a separate draft Law on Radiation Protection and a draft Law on Radioactive Waste Management are currently under preparation.

Among the many other regulations that are under preparation in Lithuania, mention should be made of the regulations for licensing unit operations at Ignalina NPP and the regulations concerning the commissioning and operation of dry storage facilities.

Finally, a draft Law on the Management of the Ignalina NPP, entitled INPP Management Law, is also being prepared. The management is currently governed by the Law of State and Municipality Enterprises. The new draft Law will introduce three levels of responsibility which will be divided between the owner (State) and founder (Ministry), the Board of Governors and the General Director and Administration of the Ignalina NPP.

International Conventions

- **Nuclear Third Party Liability**

  - Lithuania acceded to the 1963 Vienna Convention on 15 September 1992, which entered into force on 15 December 1992; Lithuania also signed the Protocol to Amend the Vienna Convention on 30 September 1997.

  - Lithuania acceded to the 1988 Joint Protocol on 20 September 1993, which entered into force on 20 December 1993.

  - Lithuania signed the 1997 Convention on Supplementary Compensation for Nuclear Damage on 30 September 1997.

- **Other Conventions**

  - 1968 Treaty on the Non-Proliferation of Nuclear Weapons was acceded to on 23 September 1991 and entered into force on the same date;

  - 1979 Convention on the Physical Protection of Nuclear Material was acceded to on 7 December 1993 and entered into force on 6 January 1994;

- 1986 Convention on Early Notification of a Nuclear Accident was acceded to on 16 November 1994 and entered into force on 17 December 1994;

- 1994 Convention on Nuclear Safety was ratified on 12 June 1996 and entered into force on 24 October 1996;

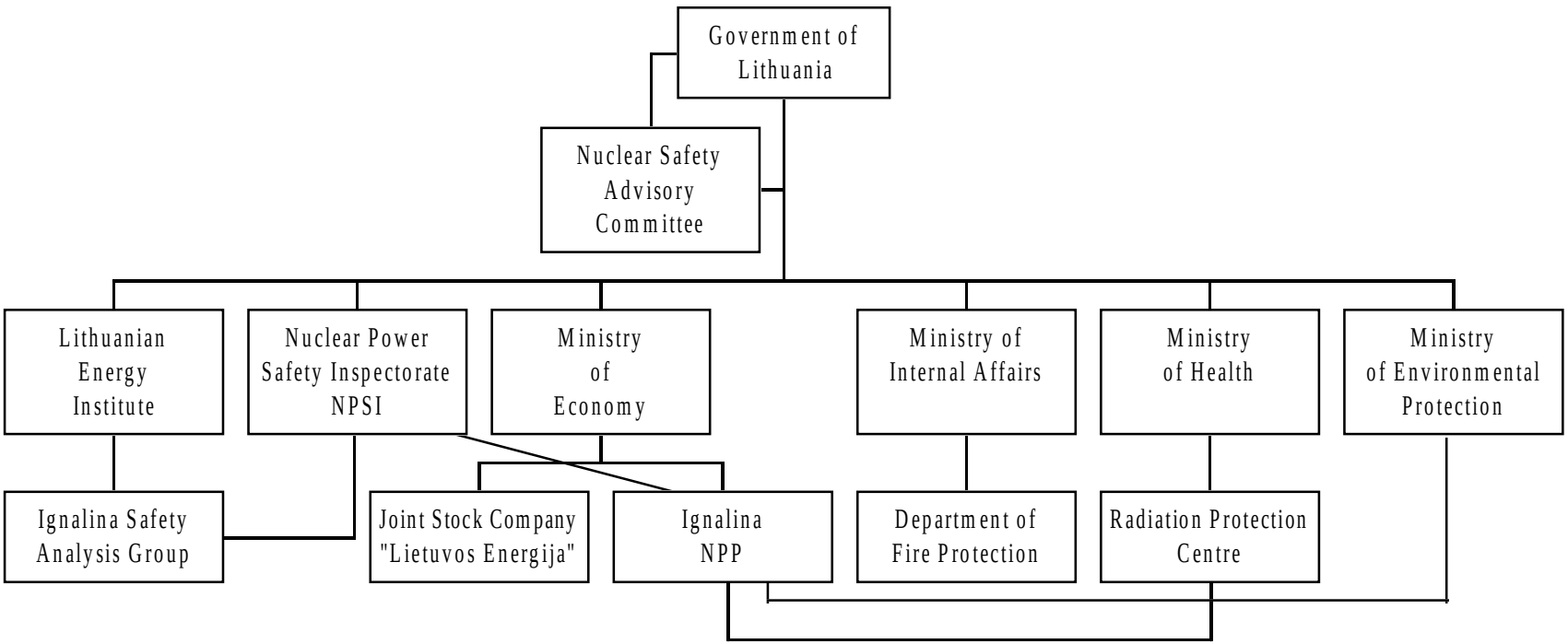
- 1996 Comprehensive Nuclear Test Ban Treaty was signed on 7 October 1996;

- 1997 Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management was signed on 30 September 1997.

Membership in Nuclear Organisations

Lithuania joined the International Atomic Energy Agency (IAEA) on 18 November 1993, and the Ignalina NPP operator is a member of the World Association of Nuclear Operators (WANO).

LITHUANIA
Interaction Between Governmental and Regulatory Bodies and Ignalina NPP



POLAND

Introduction

There are no nuclear power plants in Poland at present. There are, however, two research reactors, the Ewa reactor and the Maria reactor, located in the Institute of Atomic Energy. The decommissioning of the Ewa reactor commenced on 24 February 1995.

Construction of a Russian designed VVER-440/213 nuclear power plant began in 1982, but was discontinued following a Parliamentary Resolution adopted in 1990 on energy policy up to the year 2010. In addition, Poland possesses a spent fuel storage facility at Swierk and a radioactive waste repository at Rozan.

Competent Nuclear Authorities

The National Atomic Energy Agency (*Panstwowa Agencja Atomistyki)* or NAEA is the main regulatory body in the nuclear field. The NAEA, which was set up by the Atomic Energy Act of 10 April 1986, is a Government body directly responsible to the Prime Minister, who appoints its President. The NAEA has extensive responsibilities, including the following:

- regulating nuclear safety and radiation protection;
- licensing of the production, treatment, storage, transport, use and trade of nuclear materials as well as of radioactive sources and waste;
- licensing of siting, construction, commissioning, operation and decommissioning of nuclear installations, following assessment of all safety-related risks;
- licensing of the construction and operation of radioactive waste repositories;
- research on nuclear energy and its applications;
- supervising the manufacture of nuclear equipment and radiation sources;
- supervising radioactive waste management;
- accounting, control and physical protection of nuclear materials;
- informing the public of nuclear activities;
- co-operating with other countries on the peaceful uses of nuclear energy.

In carrying out its tasks, the Agency may:

- co-operate with other Government bodies with specific jurisdiction in fields such as technical safety, control of public health or environmental protection;

- in the interests of safety, obtain relevant information from governmental or non-governmental organisations;

- initiate contacts with international organisations.

Activities connected with NAEA's responsibilities include review and assessment, inspections and preparing draft rules and regulatory decisions for approval by the President of the NAEA. Since 1 January 1997, such activities have been performed mainly by: the Department for Radiation and Nuclear Safety and the Department for Regulatory Control of Radiation Applications. These departments were created as a result of the incorporation of the Nuclear Inspectorate of Radiation and Nuclear Safety into the NAEA. The legal basis for this incorporation is Ordinance No. 3 of the President of the NAEA of 4 July 1996, which came into force on 1 January 1997.

NAEA's main activities are related to the operation of the Maria research reactor and of one critical assembly at the Institute of Atomic Energy at Swierk, the Radioisotope Centre and the spent fuel storage facility at Swierk, the radioactive waste repository at Rozan, the transport of radiation sources, and to the three thousand users of both open and sealed radiation sources (such as in accelerators and facilities using highly radioactive isotopes).

The operating nuclear research reactor and other nuclear and radiation facilities in Poland are operated by the Institute of Atomic Energy and the Radioisotope Centre at Swierk. These are two of the seven research institutes that exist in Poland, which are co-ordinated by the President of the NAEA.

The Council for Atomic Energy Matters is an advisory body which deals with matters falling within the scope of the Agency's mandate. It was established by a Decree of the Prime Minister of 8 February 1993. The Council consists of a Chairperson, up to three Vice-Chairpersons, a scientific secretary and up to forty members. Their term of office is four years. The Prime Minister, on the recommendation of the President of the NAEA, appoints the Chairperson of the Council. Scientists, atomic energy specialists and representatives of public administration and social organisations may take part in the Council's work.

The Council initiates all activities aimed at furthering the development of atomic energy, improving radiation protection and nuclear safety and providing information on matters related to the application of nuclear and radiation techniques. The Council issues resolutions, opinions and experts reports. Its expenses are covered by the Agency's budget.

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 Economy, National Education, Defence, Internal Affairs and Administration, Foreign Affairs, Health and Welfare and Environmental Protection, Natural Resources and Forests. 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 and Welfare is responsible for making regulations on safe applications of ionising radiation for medical purposes, including activities carried out in X-ray centres, and for making rules governing occupational requirements for the use of X-ray equipment. The President of the NAEA, in agreement with the Minister, establishes the dose limits for ionising radiation, including limits for emissions of ionising radiation from everyday use of radiation-emitting products.

The President of the NAEA, in conjunction with the Ministers for Transportation and Maritime Administration, Economy, 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 into, export out of and transit through Poland of nuclear materials, radioactive sources and devices incorporating such sources.

Legislation in Force

- **Atomic Energy Act**

The Atomic Energy Act* of 10 April 1986 (Official Gazette No. 12) governs all nuclear activities in Poland. It sets out the responsibilities and tasks of the authorities and bodies engaged in such activities. The Act reflects the nuclear programme which was in existence at the time of its adoption, which included plans for the construction of a nuclear installation at Zarnowiec; those plans were postponed in 1989. The Act has been amended several times since 1986.

The Act provides that the primary consideration in the use of nuclear energy should be the protection of health, life, property and the environment. It establishes a licensing system for the following:

- nuclear installations (from site selection to decommissioning);
- production, use, conversion, storage, transport of and trade in nuclear materials, radioactive sources and waste;
- construction and operation of radioactive waste repositories;
- manufacture and use of radiation-emitting devices, etc.

Licences are issued by the President of the NAEA who may, at any time, revoke or amend a licence if nuclear safety or radiation protection requirements are not met. Operators are required to maintain records of licensed materials and radioactive sources, including waste, and to take measures to ensure their physical protection.

Establishments using nuclear materials must prepare training programmes for their personnel; these programmes must be approved by the President of the NAEA.

The President of the NAEA and several inspectors are responsible for government control of all aspects of nuclear safety and radiation protection.

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* The full text of this Act in English was reproduced in the Supplement to *Nuclear Law Bulletin* No. 43 (June 1989).

The Act also contains provisions on nuclear third party liability and compensation. The rules largely follow the provisions of the 1963 Vienna Convention on Civil Liability for Nuclear Damage to which Poland is a Party. The operator of a nuclear installation has absolute and exclusive liability for all nuclear damage resulting from the operation of the installation, except in the event of damage resulting from an act of war or exclusively from an intentional fault of the victim. As regards damage occurring during transport of nuclear materials, the consignor operator is liable for any such damage until the materials reach their destination. Nuclear damage is defined as personal injury, property damage and damage to the environment. The Law specifies in detail the extent of compensation for nuclear damage.

There is no prescription period for personal injury claims arising from a nuclear incident. However, for claims in respect of loss of or damage to property or damage to the environment, the prescription period is ten years, commencing with the date on which the incident occurred. The Ministry of Finance is to establish the amount of insurance or other financial security necessary to cover the third party liability of operators of nuclear installations. When nuclear damage suffered by any person exceeds the operator's financial security, the victim may request compensation from the Treasury Department. With respect to damage to property and the environment, the Council of Ministers is to determine the method of compensation for losses greater than the funds available.

The 1986 Atomic Energy Act was amended on 24 June 1994 (Official Gazette No. 90), to provide for the possibility of State financing of measures designed to ensure the safe use of nuclear energy. On 6 December 1994, the Council of Ministers issued a Decree specifying the type of activity which could benefit from such financial assistance (Official Gazette No. 131). The amendment also specifies that the President of the NAEA will determine the siting of the National Radioactive Waste Repository for the final storage of radioactive waste in Poland. This was determined in the Regulation of 2 September 1994 of the President of the NAEA (Mon. Pol. No. 49).

Finally, the Atomic Energy Act was amended by Parliament in July 1995, in order to provide for harsher penalties for failure to comply with the rules established in the field of nuclear safety and radiation protection. In addition, the amendment stipulates that it is the responsibility of the President of the NAEA to define clearly, in an order, the activities involving the use of ionising radiation sources which are subject to prior licensing.

During 1996, the Atomic Energy Act was revised twice. On 8 August 1996 a provision was added in order to authorise the Ministry of Defence, Ministry of Interior and Administration and the Office for National Security to determine, in co-ordination with the President of the NAEA, the principles for the application of this Act to undertakings and institutes involved in the application of atomic energy which are under their control. On 2 February 1996 a provision in the Act was modified to prohibit exposure of unduly high radiation doses to personnel voluntarily assisting in the case of a radiological incident, and also to guarantee the right of workers in nuclear facilities to refuse to participate in operations involving remediation of a radiological incident.

- **Regulations supplementing the Atomic Energy Act**

The Atomic Energy Act is supplemented by several regulations:

The Regulation of 20 October 1987 of the President of the NAEA governs the accounting and control of nuclear materials (Mon. Pol. No. 33). These rules apply to nuclear materials which are being fabricated, 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 which must be kept and details of inspections to be conducted.

The 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 (Mon. Pol. No. 27). The Regulation expressly states that these principles do not apply to such sources while they are in transit through the territory.

The Regulation of 6 June 1988 (Mon. Pol. No. 20) lays down the principles for the physical protection of nuclear materials. It provides for measures to protect nuclear materials against theft, sabotage or illegal uses, according to the 1979 Convention on the Physical Protection of Nuclear Material, to which Poland is a Party.

The Decree of the Council of Ministers of 11 January 1988 sets out rules for nuclear safety and radiation protection, which are monitored by the President of the NAEA, the Chief Inspector for Nuclear Safety and Radiation Protection and other inspectors (*Official Gazette* No. 4). Inspectors are required to examine the documentation relating to nuclear safety and radiation protection submitted by applicants in licensing proceedings, provide opinions on the siting of nuclear plants and waste disposal facilities, review training programmes for employees in nuclear installations and give periodic reports on the nuclear safety and radiation protection situation in the country.

The Regulation of 25 January 1988 of the President of the NAEA lays down the standards for dosimetric recordings in the workplace (Mon. Pol. No. 6). It specifies that data on the level of exposure of individuals must be kept for at least 30 years after cessation of the work involving exposure to ionising radiation.

The Regulation of 19 May 1989 of the President of the NAEA sets out the rules governing the classification, registration, and conditions for treatment and storage, of radioactive wastes (Mon. Pol. No. 18).

The Regulation of 31 March 1988 of the President of the NAEA lays down dose limits for ionising radiation as well as derived release limits. 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 (Mon. Pol. No. 14). The 1988 Regulation was amended on 7 July 1995 by the President of the NAEA to provide for radon dose limits in residences and workplaces. Its major innovation is in the value of radon specified. From now on, the values of radon must conform to those required by European standards in the field. Furthermore, no person under the age of sixteen may work in an environment where radiation is present (Mon. Pol. No. 35).

The Regulation of 25 February 1988 of the President of the NAEA lays down conditions governing the import, export and transit through Poland of nuclear materials, radioactive sources and articles emitting ionising radiation (Mon. Pol. No. 9).

The Regulation of 28 August 1997 concerns exemptions from licensing of certain activities involving the use of atomic energy (Mon. Pol. No. 59).

The Regulation of 19 September 1997 provides for advanced qualifications for personnel working with radioactive sources (Mon. Pol. no. 73).

The Act of 2 December 1993 dealing with foreign trade of equipment and technology with third countries provides for controls on imports, exports and transportation, in accordance with international agreements concluded by Poland (Official Gazette No. 129).

On November 1995 the Council of Ministers passed a regulation defining conditions for granting licences referred to in the Atomic Energy Act (Official Gazette No. 3).

Draft Legislation and Regulations

A Bill to revise the Atomic Energy Act of 1986 is currently being prepared. The proposed amendments include, *inter alia*, procedures to be followed in the case of a nuclear or radiological accident.

International Conventions

- **Nuclear Third Party Liability**

  - Poland acceded to the 1963 Vienna Convention on 23 January 1990, and it entered into force on 23 April 1990; Poland signed the 1997 Protocol to Amend the Vienna Convention on 3 October 1997.

  - Poland acceded to the 1988 Joint Protocol on the Application of the Vienna Convention and the Paris Convention on 23 January 1990, and it entered into force on 27 April 1992.

- **Other International Conventions**

  - 1960 Convention concerning the Protection of Workers against Ionising Radiation was ratified on 23 December 1964 and entered into force on 23 December 1965;

  - 1963 Treaty Banning Nuclear Weapons Tests in the Atmosphere, in Outer Space and under Water was ratified on 14 October 1963 and entered into force on the same date;

  - 1968 Treaty on the Non-Proliferation of Nuclear Weapons was ratified on 12 June 1969 and entered into force on 5 March 1970;

  - 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 was ratified on 15 November 1971 and entered into force on 18 May 1972;

  - 1979 Convention on the Physical Protection of Nuclear Material was ratified on 5 October 1983 and entered into force on 8 February 1987;

  - 1986 Convention on Early Notification of a Nuclear Accident was ratified on 24 March 1988 and entered into force on 24 April 1988;

- 1986 Convention on Assistance in Case of a Nuclear Accident or Radiological Emergency was ratified on 24 March 1988 and entered into force on 24 April 1988;

- 1994 Convention on Nuclear Safety was ratified on 14 June 1995 and entered into force on 24 October 1996;

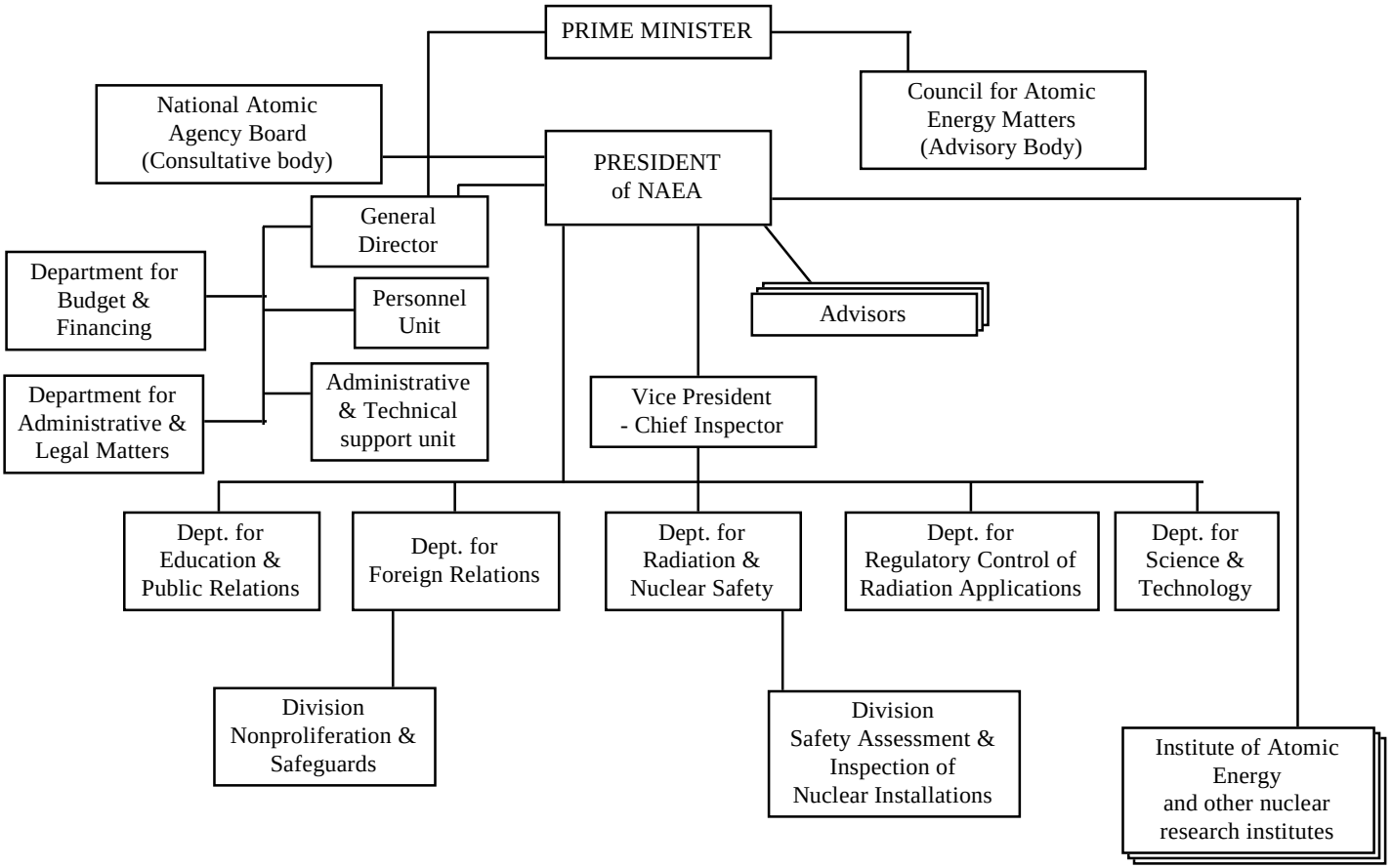
- 1996 Comprehensive Nuclear Test Ban Treaty was signed on 24 September 1966.

- 1997 Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management was signed on 3 October 1997.

Membership in Nuclear Organisations

Poland joined the International Atomic Energy Agency (IAEA) on 31 July 1957. It also joined the Nuclear Suppliers Group and the Zangger Committee. The Polish Power Grid Company is a member of the World Association for Nuclear Operators (WANO).

POLAND
National Atomic Energy Agency (NAEA)



ROMANIA

Introduction

At present, Romania has one nuclear power station at Cernavoda on the Danube. Only Unit 1 is in operation; Unit 2 is under construction and expected to be in operation by the end of 2002. The construction of Units 3-5 is currently suspended. Unit 1, a CANDU-type reactor with a 706 MWe capacity, has been operated by RENEL, the Romanian Electricity Authority (*Regia Autonoma Nationala de Electricitate)*, since 17 April 1996. RENEL is the utility responsible for the distribution and production of electricity in Romania and reports directly to the Ministry of Industry and Trade.

Romania possesses two research reactors, the 14 MWe TRIGA-type Material Testing Reactor of the Pitesi Institute for Nuclear Research (INR) and the 2 MWe WWR-S type research reactor of the Institute for Physics and Nuclear Engineering (INPE).

Romania also has several radioactive waste repositories and storage facilities. The storage facilities at the Cernavoda site include a defective fuel storage bay and a spent fuel storage bay. Final disposal of low-level radioactive waste is done at the National Repository for Low and Medium Level Radioactive Waste at Baita Bihor, operated under the responsibility of the INPE. Under the authority of RENEL, research has been initiated to establish a Spent Fuel Intermediate Storage Facility. Romania also possesses a radioactive waste treatment plant which is operated under the responsibility of the INPE Waste Treatment Department.

The Rare Metals Autonomous Administration is involved in the exploration and exploitation of uranium ore. It is responsible for the management of radioactive waste resulting from its mining, exploration and exploitation activities.

Competent Nuclear Authorities

The National Commission for the Control of Nuclear Activities *Comisia Nationala pentru Controlul Activitatilor Nucleare*, or CNCAN is the regulatory body responsible for regulating the use and development of nuclear energy. The Commission is led by a President who holds the rank of Under-Secretary of State who reports directly to the Minister of Waters, Forests and Environmental Protection. The President is assisted by an Advisory Committee and the CNCAN Board.

The Commission was established by Decree No. 29 of 8 January 1990, and its powers were set out in Decree No. 221 of 11 May 1990. The Commission is responsible for all issues of nuclear safety in the siting, construction and operation of nuclear installations in Romania, as well as for quality assurance, radiation safety, safeguards, radioactive waste management, export controls, physical protection and emergency preparedness. In the discharge of its duties, the Commission:

- issues regulations, technical documents, standards and instructions for the safe operation of nuclear installations and power plants; for protection of workers, the public and the environment against undue radiological hazards and for physical protection, safeguards, transport, import, export and transit of radioactive materials;

- reviews and assesses safety information, submitted by licence applicants;

- issues, amends and revokes licences and approves emergency preparedness plans;

- verifies compliance with regulations and procedures during design, construction, commissioning and operation of NPP.

The Commission is also responsible for developing international co-operation in the nuclear field with bodies engaged in similar activities in other countries and with international organisations.

In June 1997, the Romanian Government approved the new organisational structure of the CNCAN, which clearly demonstrates the separation of responsibilities for major nuclear installations from those for radioactive sources applications. Consequently, the Commission now has two main Divisions: the Nuclear Power Plants and Fuel Cycle General Division and the Radioisotope Applications General Division. Both report directly to the President of the CNCAN.

Each Division is made up of two sections. The Nuclear Power Plants and Fuel Cycle General Division comprises the Reactor Safety & Licensing Section and the Quality Assurance, Safeguards and Fuel Cycle Section. The Radioisotope Applications General Division comprises the Evaluations and Regulation Section and the Radioactive Sources Applications Section.

In the exercise of its regulatory functions, the CNCAN co-operates with other governmental bodies, which have a complementary role in regulating nuclear activities; for example:

- the Ministry of the Interior establishes rules concerning fire and physical protection;

- the Ministry of Health is responsible for the use of radioactive products for diagnosis and medical treatment and carries out the monitoring of occupational and public radiological exposure;

- the Ministry of Water, Forests and Environmental Protection and its Environmental Protection Department in particular, is responsible for regulating radioactivity in the environment (air, water, soil, vegetation), for developing environmental protection legislation, for monitoring environmental impact assessments of nuclear installations and for the environmental protection licensing process;

- the Ministry of Industry & Trade issues licences for the import and export of nuclear materials;

- the Pressure Vessels Authority of the Ministry of Industry & Trade is responsible for the licensing and control of pressure vessels, boilers and pressure installations;

- the Central Commission for Nuclear Accidents and Falling of Cosmic Objects, under the authority of the Ministry of National Defence, is responsible for emergency preparedness and early notification of potentially affected States in the case of a nuclear incident; and

– the Ministry of Labour and Social Protection is responsible for industrial safety.

The National Atomic Energy Agency was established on 1 November 1994 as a department of the Ministry of Research and Technology. As such, it is responsible for scientific research, the development and application of nuclear technologies and the promotion of nuclear energy. The Agency's goal is the co-ordination of nuclear research at the national level.

An important part of nuclear power plant research and design is performed by the Pitesi Institute for Nuclear Research (INR) and by the Bucharest Magurele Centre of Technology and Engineering for Nuclear Projects, which falls under the control of RENEL. The Institute for Physics and Nuclear Engineering (INPE), under the authority of the Institute of Atomic Physics within the Ministry of Research and Technology, conducts basic research in the nuclear field. It also functions as the central waste treatment organisation and bears, through its Waste Treatment Department, responsibility for the collection, treatment and disposal of wastes.

A National Export Control Agency was created by Government Decision of 23 September 1992 (Decision No. 594/1992) to oversee the import and export of sensitive goods and technology. Its duties include the examination of certificates relating to the import of nuclear products and the provision of advice based on such examination; the verification of all aspects of the import and export of goods and technologies subject to control and participation in international co-operation in this field.

Legislation in Force

- **Law on Safe Conduct of Nuclear Activities**

On 10 October 1996 the President of the Republic of Romania promulgated the Law on the Safe Conduct of Nuclear Activities (Law No. 111/1996)*. It abrogates previous laws governing nuclear activities, such as Law No. 61/1974 regulating all nuclear activities in Romania, Law No. 6/1982 dealing with quality assurance in respect of nuclear installations and other legislation which is contrary to it.

Its purpose is to bring the Acts of 1974 and 1982 up to date, taking into account:

– changes in Romania's political and economic environment, including the transition to a market economy, democracy and a separation of powers;

– regulatory experience gained through the implementation of the two Acts mentioned above;

– new legal developments in the nuclear field, both national and international;

– recommendations by competent international organisations;

– the desire to strengthen the enforcement provisions.

* The full text in English of this Law was reproduced in the Supplement to *Nuclear Law Bulletin* No. 59 (June 1997).

The 1996 Law aims at 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. The Law is further applicable to ore extraction and the processing of uranium and thorium ores, and to production, supply and storage of nuclear fuels, radioactive materials and waste. These activities require a licence from the National Commission for the Control of Nuclear Activities 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 the issuing authority if:

- the holder of the licence 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 holder of the licence is no longer considered to be a valid legal entity.

All activities contributing to the proliferation of nuclear weapons or other explosive devices and which represent a threat to national security are henceforth prohibited. This provision covers the manufacture, import, export and transport of nuclear weapons or explosive devices on Romanian territory. The import of radioactive waste is forbidden, with the exception of the re-importation of spent fuel which has been reprocessed overseas.

It is necessary to obtain the opinion of the Ministry of Health before the Commission issues a licence for the use of radionuclides and radiation sources for medical purposes or the provision of irradiated products for public consumption.

Licensees must apply the measures required for nuclear safety and for protection of personnel, the general public and the environment. Furthermore, they must pay a contribution to the Radioactive Waste Management and Decommissioning Fund.

Medical checks of exposed personnel are carried out regularly, in accordance with measures laid down by the Ministry of Health.

Licensees must also keep a detailed account of the radioactive and nuclear materials for which they are responsible and ensure that they will not be lost, stolen or that radioactive emissions will not be released accidentally. In the event of an accidental release, they must inform the competent authorities who, in turn, will inform neighbouring countries accordingly. Licensees must further limit and mitigate the consequences of any such release.

The 1996 Law does not cover nuclear third party liability in a detailed manner, since the Government intends to introduce a draft Law on Civil Liability for Nuclear Damage. However, the Law does stipulate that the operator is exclusively liable for damages resulting in personal injury or death, and loss of, damage to, and loss of use of property, in conformity with Romania's international obligations. The 1991 Constitution provides that international treaties to which Romania is a Party are part of Romanian national law. Since 1992, Romania has been a Party to both the 1963 Vienna Convention on Civil Liability for Nuclear Damage and the 1988 Joint Protocol on the Application of the Vienna Convention and the Paris Convention.

A nuclear and non-nuclear liability policy was signed for the Cernavoda NPP, and consequently the licensee is insured for 5 million Special Drawing Rights (SDRs). About one per cent of this coverage is provided by the Romanian Nuclear Insurance Pool, while the remaining 99 per cent is covered by a pool consisting of Western insurance companies. The Romanian Nuclear Insurance Pool, the so-called "Romania Atomic Insurance Pool" consists of specialised insurance and reinsurance companies. The Pool is based on fundamental principles common to all nuclear pools.

- **Emergency Planning and Preparedness**

The Law of the Defence Against Disasters sets out the responsibilities of the central and local authorities in the event of emergencies, such as nuclear accidents. The responsibility at State level lies with the Governmental Commission for Defence Against Disasters, headed by the Prime Minister, and a Technical Secretariat attached to the General Secretariat of the Government. Under the authority of this Governmental Commission, several Central Commissions are responsible for emergency planning and preparedness for different types of events qualified as disasters. Among them is the Republican Command for Intervention in Case of Nuclear Accidents (RCICNA) which is attached to the General Inspectorate for Civil Defence. According to the Law, the RCICNA is the competent authority for emergency planning and preparedness in the event of a nuclear accident at licensed utilities, for radiological emergencies occurring as a result of other licensed nuclear activities and radiological emergencies resulting from transboundary effects.

- **Implementing Legislation**

Imports and exports of nuclear materials are regulated by the above-mentioned Government Decision No. 594/1992 creating the National Export Control Agency and by other Orders. Order No. 2/1993, which was made by the Minister of Industry and Trade in implementation of Government 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, National Defence, and Industry and Trade provides for a system of control over the export of materials, chemical and biological substances.

Draft Legislation and Regulations

A draft Law on Civil Liability for Nuclear Damages and a draft Law on the Fund for the Management of Radioactive Waste and Decommissioning are under preparation by CNCAN. In addition, the CNCAN has prepared a draft National Regulation for Physical Protection of Nuclear Materials, which incorporates the guidelines specified in INFCIRC/225/Rev.3.

The regulations covered by Ordinance No. 133/1976 of the State Commission for Nuclear Energy concerning nuclear safety are under review to ensure implementation the recommendations of the International Commission on Radiological Protection (Issue No. 60) and to improve the reporting system. Similarly Ordinance No. 317/1975 of the State Commission for Nuclear Energy relating to the safe transport of radioactive materials is currently under review to ensure implementation of the recommendation to establish a standard document for transfers and provision of information relating to

the shipments of radioactive substances based on Council Directive 92/3/Euratom and Regulation 93/1493/Euratom.

Further regulations under preparation concern the revision of standards governing the transport of radioactive material, and standards relating to radiation protection and quality assurance in nuclear research and decommissioning activities.

International Conventions

- **Nuclear Third Part Liability**

  - Romania acceded to the 1963 Vienna Convention on 29 December 1992, and it entered into force on 29 March 1993; Romania signed the 1997 Protocol to Amend the Vienna Convention on 30 September 1997.

  - Romania acceded to the 1988 Joint Protocol on 29 December 1992, and it entered into force on 29 March 1993.

  - Romania signed on 30 September 1997 the 1997 Convention on Supplementary Compensation for Nuclear Damage.

- **Other Conventions**

  - 1963 Treaty Banning Nuclear Weapons Tests in the Atmosphere, in Outer Space and under Water was ratified on 23 November 1963 and entered into force on 23 December 1963;

  - 1968 Treaty on the Non-Proliferation of Nuclear Weapons was ratified on 4 February 1970 and entered into force 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 was ratified on 10 July 1972 and entered into force on the same date;

  - 1979 Convention on the Physical Protection of Nuclear Material was ratified on 23 November 1993 and entered into force on 23 December 1993;

  - 1986 Convention on Early Notification of a Nuclear Accident was acceded to on 12 June 1990 and entered into force on 13 July 1990;

  - 1986 Convention on Assistance in Case of a Nuclear Accident or Radiological Emergency was acceded to on 12 June 1990 and entered into force on 13 July 1990;

  - 1994 Convention on Nuclear Safety was ratified on 1 June 1995 and entered into force on 24 October 1996;

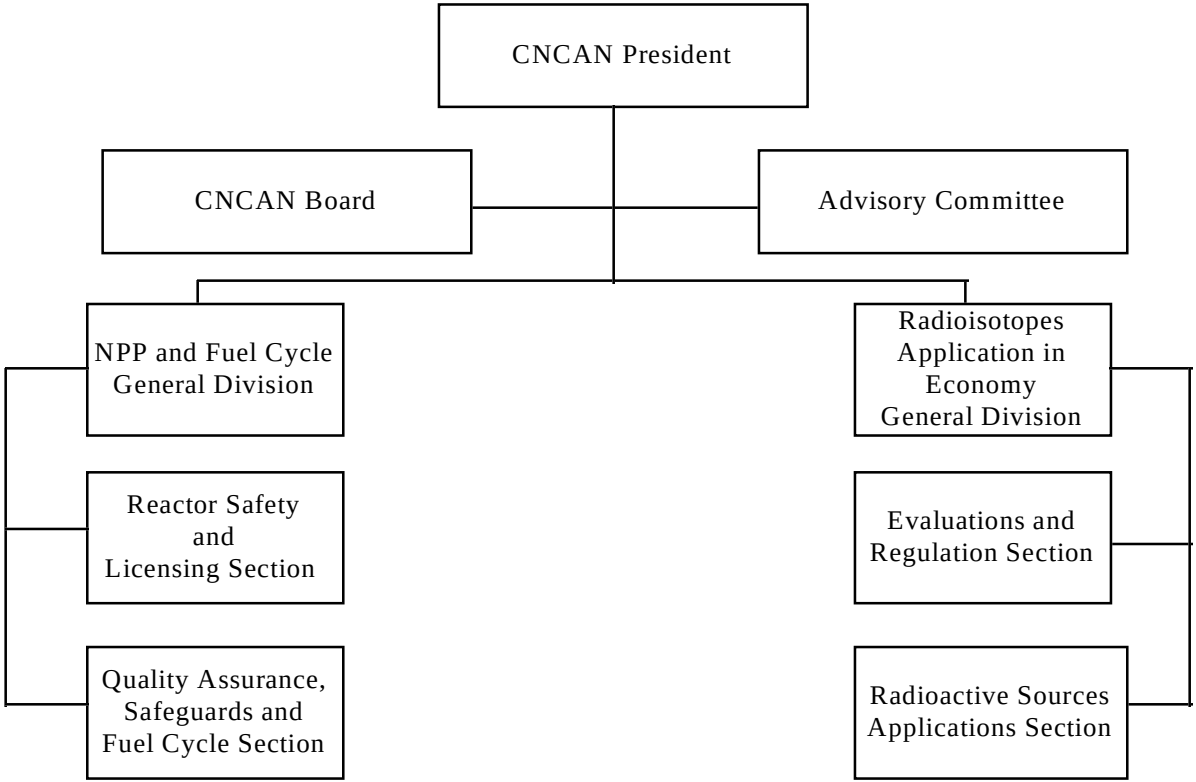
- 1996 Comprehensive Nuclear Test Ban Treaty was signed on 24 September 1996.

- 1997 Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management was signed on 30 September 1997.

Membership in Nuclear Organisations

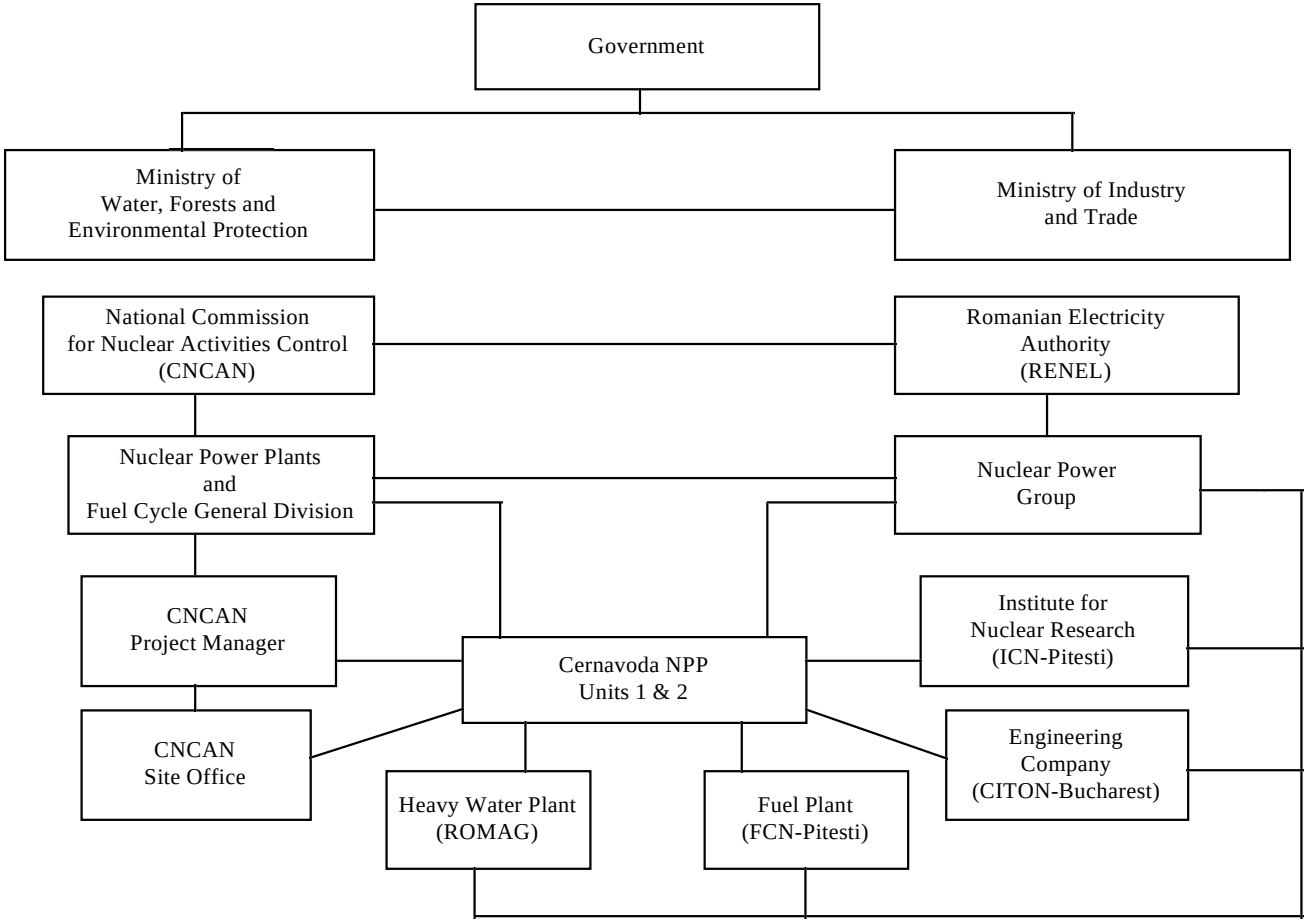
Romania joined the International Atomic Energy Agency (IAEA) on 29 July 1957. The Romanian Electricity Authority (RENEL) is a member of the World Association of Nuclear Operators (WANO). Romania is a member of both the Nuclear Suppliers Group and the Zangger Committee.

ROMANIA
National Commission for the Control of Nuclear Activities (CNCAN)

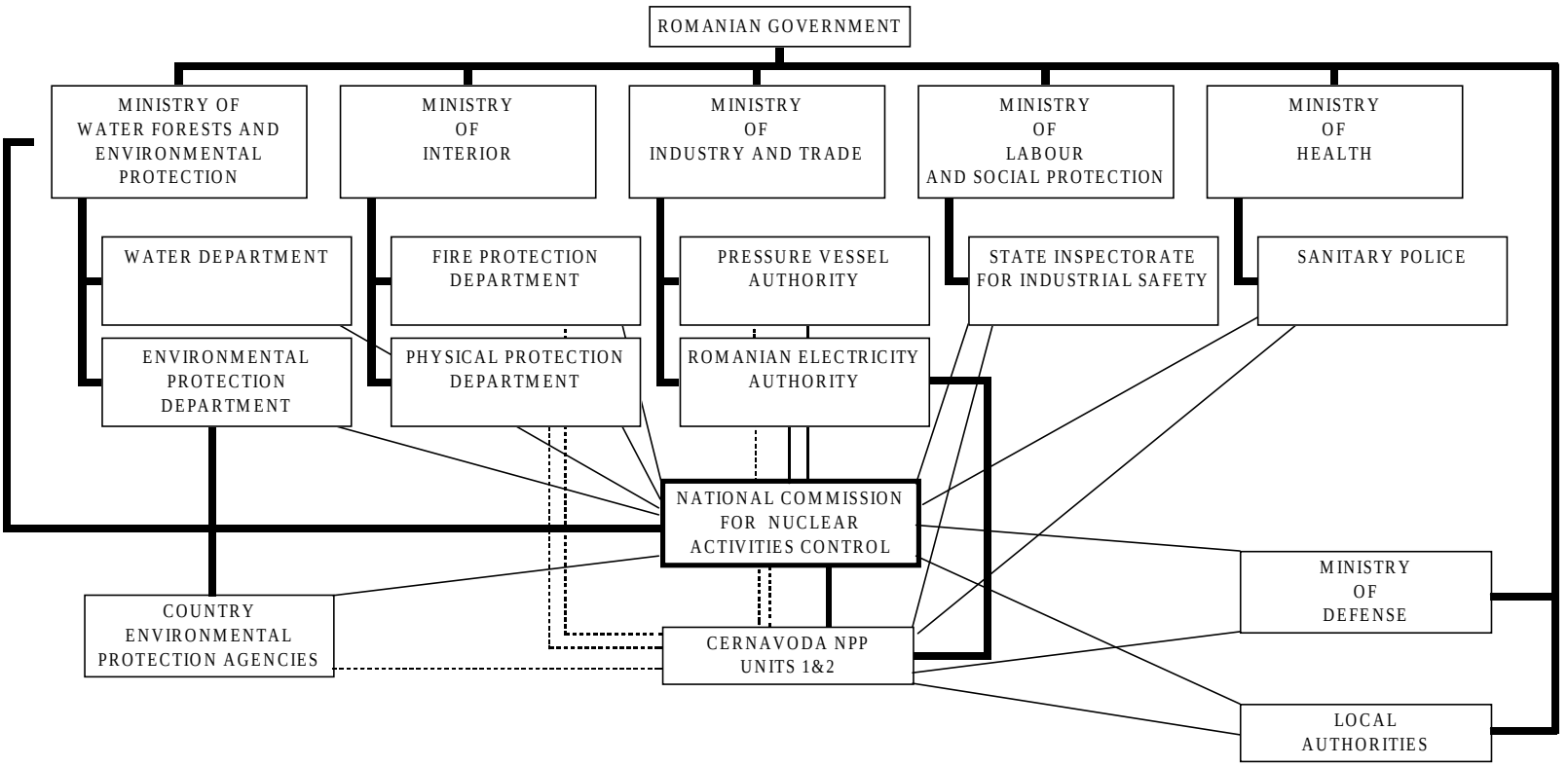


ROMANIA

Nuclear Regulatory Authority (CNCAN) - Utility (RENEL) - Interface for the Cernavoda Licensing Process



ROMANIA
Regulatory Authorities for the Cernavoda NPP Licensing Process



RUSSIAN FEDERATION

Introduction

With an installed capacity of more than 20 000 MWe, the Russian Federation is the largest producer of nuclear power-generated electricity of the four former Soviet Republics having nuclear power plants in operation.

At present, there are 27 nuclear power plants in operation at 9 sites in Russia and 18 units under construction. Of these reactors, 13 are PWRs (VVER design) and 14 are light-water-cooled graphite reactors (LWGR) of which 11 are of RMBK design. The oldest, Novovoronezh-3, started operation in 1972 and the newest, Balakovo-4, in 1993. Furthermore, approximately 45 research reactors are in operation.

In addition, Russia 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.

The Russian Federation sends its spent fuel to two reprocessing plants, the RT-1 operated by the Mayak enterprise at Chelyabinsk and RT-2, a reprocessing plant for VVER-1000 spent fuel which is under construction. Until the construction of the latter plant is completed, spent fuel is stored at a facility near Krasnoyarsk. Spent fuel from RMBKs is not reprocessed but is stored on site.

Finally, Russia has vast uranium resources and has one uranium processing facility in operation, 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, a joint stock company, distributes and sells electricity in Russia. It owns the largest thermal and hydro plants as well as all the high-voltage transmission lines of more than 300 kV in Russia. In addition, it buys the output of the 21 individual utility companies and a large proportion of Rosenergoatom's output (see below).

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 programs.

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 created by Presidential Decree No. 1055 on 7 September 1992. The Decree sets out the mandate of this body as a State-owned enterprise and operator.

Rosenergoatom is responsible for the management of all nuclear power plants with the exception of the Sosnovy Bor Plant. It 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 with regard to nuclear third party liability. In addition, Rosenergoatom is responsible for plant maintenance, technical support, operations planning, emergency planning, the dissemination of information, and operator and staff training.

The Russian nuclear regulatory agency is the State Committee for Nuclear and Radiation Safety (Gosatomnadzor), which is responsible for the supervision of Russian civilian nuclear power plants. The Statute of Gosatomnadzor was approved by Presidential Directive No. 283 on 5 June 1992 as amended by Presidential Directive No. 636 of 16 September 1993 and Presidential Decree No. 1923 of 15 September 1994, dealing with measures to improve the system of accounting for and safe keeping of nuclear materials.

Presidential Directive No. 350-r of 26 July 1995 redefined certain regulatory functions in the nuclear energy field. Gosatomnadzor is, for example, now subject to two authorities: as a federal agency forming part of the executive, it derives its authority from the Russian Government; however, insofar as it deals with matters of nuclear safety, it falls directly under the authority of the Russian President.

According to the Law on the Use of Atomic Energy of 20 October 1995 (the General Law) and to the provisions contained in its Statute, Gosatomnadzor is the chief regulatory body for nuclear safety. As such, it is responsible for the regulation of nuclear activities for peaceful purposes. It is entrusted with the task of defining safety principles and criteria, standards, rules and other regulatory measures, and in particular, for establishing a licensing and inspection system for such activities.

It should be noted that Gosatomnadzor's main function is to issue licences for nuclear installations according to the special procedure outlined in the General Law. In addition, Gosatomnadzor has the following specific responsibilities:

- to ensure compliance with the requirements of Russian legislation on nuclear and radiation safety, in the manufacture, treatment and use of nuclear energy, nuclear materials and radioactive substances;

- to regulate the storage and treatment of radioactive waste and of spent fuel, as well as their recycling and disposal;

- to ensure the physical protection of nuclear materials as well as their non-proliferation;

- to conduct inspections of hazardous nuclear and radiation facilities;

- to issue licences to carry out activities involving the use of nuclear energy;

- to impose penalties in the event that safety regulations are violated, including the revocation of licences, if warranted.

Other bodies which exercise jurisdiction in this field, are the following: the Ministry of Health, the Ministry of Internal Affairs, the Ministry of Civil Defence, Emergencies and Natural Disasters, Ministry of Transport, Gosstandart of the Russian Federation, and the Russian Federal Hydrometeorology and Environmental Monitoring Service. The Russian Institute for Nuclear Power Operations is responsible for improving plant operations.

Lastly, 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.

Legislation in Force

- **Nuclear Law and Implementing Legislation**

In the Russian Federation the Federal Law on the Use of Atomic Energy of 20 October 1995 is the general law that governs all nuclear activities*. It establishes the principles for the regulation of the use of atomic energy, such as safeguarding health and life and protecting the environment and property. It is also designed to set out the rights and obligations of private citizens, corporate entities and public authorities. In addition, the Law contains provisions concerning:

- the safe use of atomic energy;
- free access to information on the use of atomic energy (unless such information constitutes a State secret);
- 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
- compensation for damage caused by the effects of radiation.

However, activities associated with the development, manufacture, testing and use of nuclear weapons and of nuclear installations for military purposes do not fall within the scope of this Law. Such activities are subject to other federal laws.

The Law contains provisions on liability for radiation damage. Although the Russian Federation is not a Party to the 1963 Vienna Convention on Civil Liability for Nuclear Damage, the Law takes into account some of its essential elements. Liability for damage caused by operations linked to the use of nuclear energy lies with the operating body of the nuclear installation, the radiation source or the storage centre. The operating body is strictly liable for the 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 it has not yet ratified the Convention. Furthermore, the Law

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* The full text in English of this Law was reproduced in the Supplement to *Nuclear Law Bulletin* No. 57 (June 1996).

stipulates that the operator is obliged to obtain financial security for the maximum amount of liability. Finally, if the operator's financial security is insufficient to cover the damage for which he is liable, the Russian Government is to make available funds to cover such damages.

Numerous legal instruments have been enacted pursuant to this Law to regulate the use of nuclear energy. Moreover, by Decree No. 367-r, adopted, on 12 March 1996, the Government has approved a plan to establish supplementary legislation to cover all activities in the nuclear field.

Presidential Decree No. 1012 on Guarantees for the Safe and Sustainable Operation of the Nuclear Power Industry in the Russian Federation of 2 July 1996 provides for a special fund to be set up by the Government to finance scientific research to improve the safety of facilities defined in the Law on the Use of Atomic Energy. Under the Decree, the Government is also to provide guarantees in order to attract foreign investment.

- **Control over Nuclear Materials**

The Law on the Use of Atomic Energy and its implementing decrees substantially revises the regulatory framework for Russian exports and imports. Decree No. 124 of 8 February 1996 provides for the creation of a list of nuclear materials, equipment, special non-nuclear materials and technologies which are to be subject to export control. This list has been approved by the President by Decree No. 202 of 14 February 1996. The purpose of the list is to ensure compliance with domestic legislation and with international obligations on non-proliferation of nuclear weapons, as adopted by the Russian Federation.

Decree No. 312, issued by the President on 27 March 1992, is, however, still in effect. It provides for the control of exports of nuclear materials and technology and specifically prohibits their export to countries which are not Parties to the IAEA Safeguards System.

Russian Government Decree No. 291, issued on 16 March 1996, 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.

On 14 October 1996, the Russian Government adopted a regulation on a system for State accounting of nuclear materials in order to increase their security.

- **Radiation Protection**

The Federal Law on Radiation Safety of the Population, was enacted on 9 January 1996 and entered into force on 28 January 1997. The Law complements the Federal Law on the Use of Atomic Energy. Its purpose is to protect the population against the effects of radiation generated by the use of atomic energy. It establishes a legal and administrative framework to ensure radiation safety throughout the Russian Federation.

This legislation affirms the priority of human health and environmental protection in the operation of nuclear installations, and the use of radioactive substances and other sources of ionising radiation. It sets forth three principles of radiation safety, as well as a mechanism for their implementation. These principles are: dose limitation, justification and optimisation.

- **Radioactive Waste**

A law dealing with radioactive waste management has been passed by the State Duma and is awaiting the signature of the President. Apart from the provisions of the Law on the Use of Atomic Energy, radioactive waste management is subject to various regulations in the area of environmental protection and public health:

- the Law of 3 March 1992 on the Protection of the Environment prohibits the import of radioactive waste and materials from other States for the purpose of storage and ground disposal;

- the new Water Code of 1995 prohibits the emplacement of radioactive waste in water basins;

- Governmental Decree No. 824 of 14 August 1993 on priorities for the treatment of radioactive waste and spent fuel;

- Governmental Decree No. 805 of 6 July 1994 on priorities for the treatment of radioactive waste and spent fuel also establishes measures for the treatment of radioactive waste, and for the creation of regional storage facilities.

- **Regime of Nuclear Installations**

By Presidential Decree No. 1012 on Guarantees for the Safe and Sustainable Operation of the Nuclear Power Industry in the Russian Federation of 2 July 1996, the Russian Government commits itself to providing State guarantees to operating organisations and Rosenergoatom with the aim of encouraging foreign investment in nuclear safety.

The Presidential Decree of the Russian Federation of 21 January 1997 on the Federal Organs of Executive Power Authorised to Implement the State Safety Regulation for the Utilisation of Nuclear Energy is directed at federal agencies, such as the Federal Nuclear and Radiation Safety Supervisory Committee (Gosatomnadzor), the Ministry of Health, the Federal Mining and Industrial Supervisory Committee (Gosgortechnadzor) and the Ministry of Internal Affairs, as well as agencies authorised to implement State regulation of radiation safety and technical and fire safety in the utilisation of nuclear energy.

- **Emergency Measures**

On 11 December 1994, the Russian Parliament adopted an Act on the Protection of the Population and Territories in Emergency Situations. This Act defines emergency situations to include those resulting from accidents or disasters at nuclear installations.

Presidential Decree No. 1923 of 15 September 1994 concerns measures to be taken to improve the accounting and control system for nuclear materials. The Decree designates Gosatomnadzor as the agency responsible for security, and provides that the Government establish the measures necessary to carry out the State's special programme for monitoring nuclear materials and nuclear installations and for preventing the illicit traffic of nuclear materials at State borders.

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. The Decree 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.

- **Indemnification of Nuclear Damage**

Russia has adopted legislation concerning the protection and indemnification of Russian citizens who were victims of the Chernobyl accident or other radiation accidents. 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 20 May 1993 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; and

- the Act of 19 May 1995 on the social protection of citizens as a result of nuclear testing at the Semipalatinsk Test Range.

These Laws define the legal status of such 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.

As regards the insurance of nuclear risks, several Russian insurance companies have recently established a Nuclear Insurance Pool, which is in the process of being registered with the Ministry of Finance.

- **Non-Proliferation**

On 24 June 1996 the Russian Government adopted the Regulation on the Implementation of International Agreements for the Safe Storage and Transport of Nuclear Weapons. The Regulation aims to define the participation of the Russian Federation in international co-operation in this area.

Draft Legislation and Regulations

Several laws are currently being prepared:

- The Law on Radioactive Waste Management has been passed by the State Duma and awaits signature of the Russian President. It aims to establish a legal framework for the safe treatment, disposal and storage of radioactive waste, to create a system of comprehensive environmental monitoring of regional storage facilities and waste disposal sites.

- The draft Law on Compensation For Nuclear Damage and Nuclear Risk Insurance was submitted to the Government for final approval and later transmitted to the Duma. The draft Law aims to guarantee full compensation for nuclear damage and provides for the procedures to obtain such compensation. It provides for exclusive and strict liability to be channelled onto the operator of a nuclear installation. The draft Law also provides for mandatory insurance up to the liability limit, and 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, whereas the limit for property damage claims is set at three years.

- A draft Law on Social Protection Measures for Citizens Residing or Employed in Areas Where Nuclear Power Facilities are Located.

- A draft Law on Administrative Responsibility of Organisations Carrying Out Activities Involving the Use of Atomic Energy.

- Several draft laws to amend the Criminal Code, and the Code of Administrative Sanctions.

International Conventions

- **Nuclear Third Party Liability**

The Russian Federation signed the 1963 Vienna Convention on 8 May 1996.

- **Other Conventions**

On 21 December 1991, the Russian Federation declared that it would be the successor to the Soviet Union of conventions, agreements and other international legal instruments concluded by the Soviet Union in the nuclear field. They are the following:

- 1960 Convention concerning the Protection of Workers against Ionising Radiation was ratified on 22 September 1967 and entered into force on 22 September 1968;

- 1963 Treaty Banning Nuclear Weapons Tests in the Atmosphere, in Outer Space and under Water, was signed 10 October 1963, ratified on 10 October 1973 and entered into force on the same date;

- 1968 Treaty on the Non-Proliferation of Nuclear Weapons was ratified on 5 March 1970 and entered into force 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 was ratified on 18 May 1972 and entered into force on the same date;

- 1979 Convention on the Physical Protection of Nuclear Material was ratified on 25 May 1983, entered into force on 8 February 1987 and continued on 26 December 1991;

- 1986 Convention on Early Notification of a Nuclear Accident was ratified on 23 December 1986, entered into force on 24 January 1987 and continued on 26 December 1991;

- 1986 Convention on Assistance in Case of a Nuclear Accident or Radiological Emergency was ratified on 23 December 1986, entered into force on 26 February 1987 and continued on 26 December 1991;

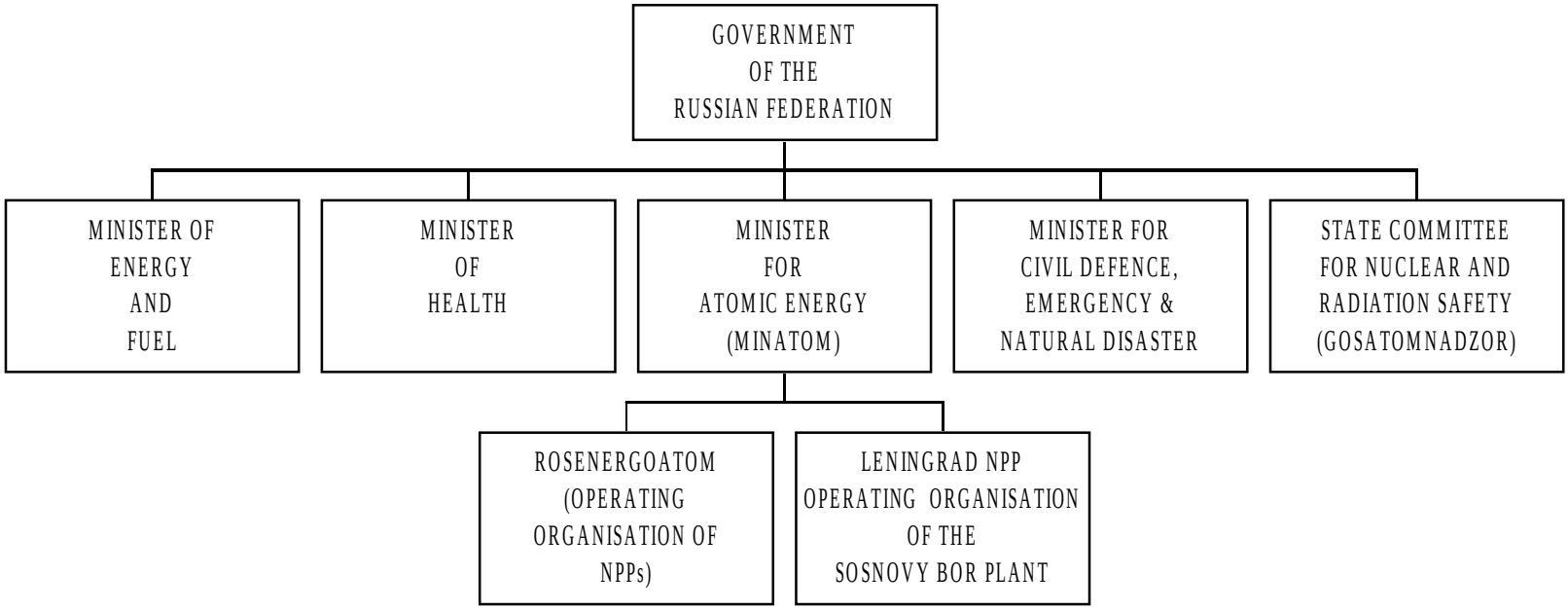
- 1994 Convention on Nuclear Safety, was accepted on 12 July 1996 and entered into force on 24 October 1996; and

- 1996 Comprehensive Nuclear Test Ban Treaty was signed on 24 September 1996.

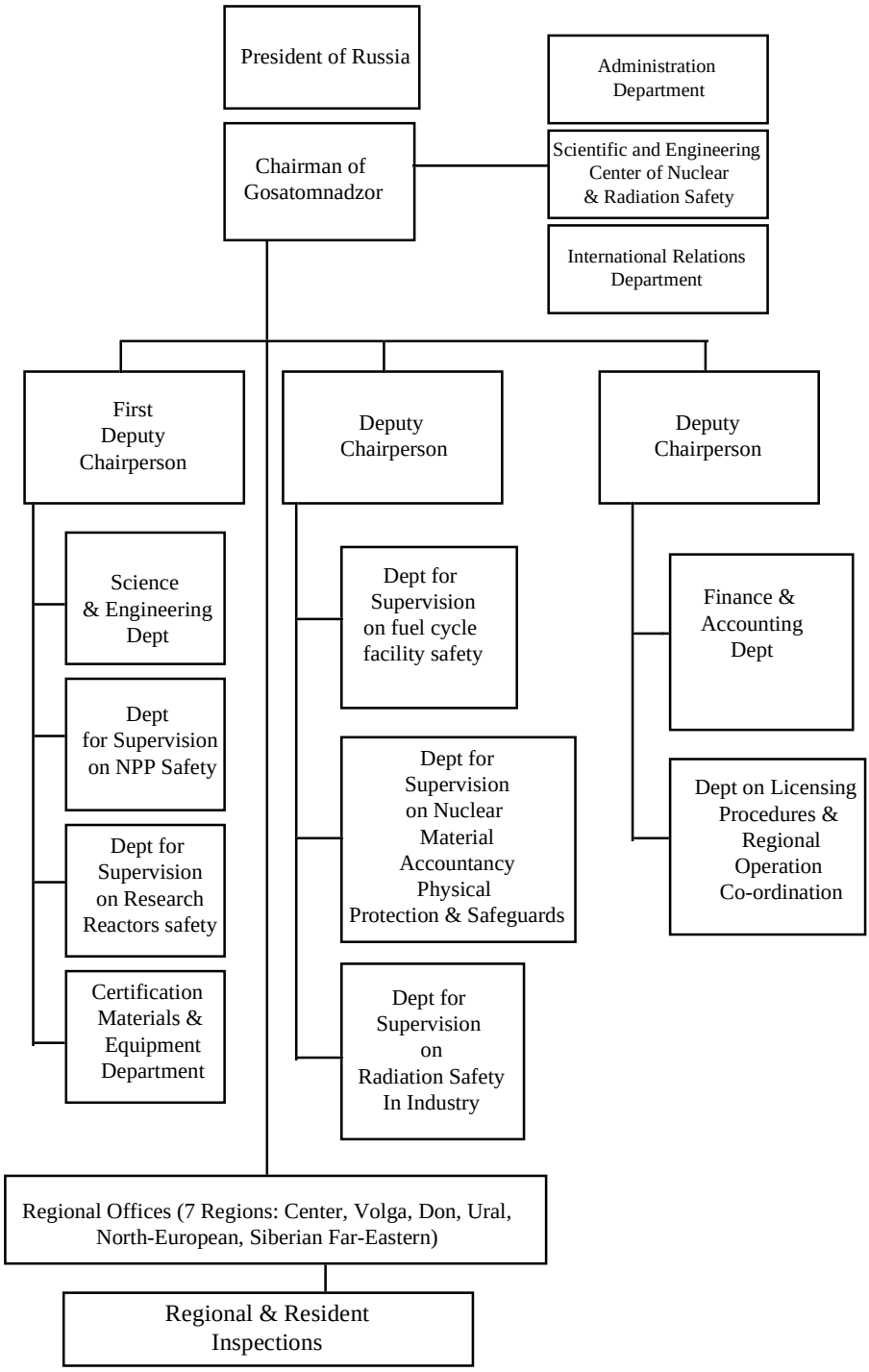
Membership in Nuclear Organisations

The Russian Federation joined the International Atomic Energy Agency (IAEA) on 29 July 1957. Rosenergoatom is a member of the World Association of Nuclear Operators (WANO). Russia also joined the Nuclear Suppliers Group and the Zangger Committee.

RUSSIAN FEDERATION
Competent Authorities for Nuclear Energy



RUSSIAN FEDERATION
Structure of the Gosatomnadzor



SLOVAK REPUBLIC

Introduction

There are four nuclear power plants in operation and one unit which has been decommissioned at the Bohunice station. Two are VVER 440/230 and two are 440/213 with a total installed capacity of 1 632 MWe. Four new units are under construction at Mochovce, each being the VVER-440 model V213 with 412 MWe each. The construction of a low-level radioactive waste repository has been completed and is in the process of being licensed.

The *Slovenske Electrarne* is the Slovak public utility responsible for the distribution of electricity in the Slovak Republic, including electricity generated by the nuclear power plants.

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 and its powers are based on Act No. 2/1993 of the Slovak Parliament. 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 small Secretariat, and two Departments, one for inspection activities and one for safety policy and international co-operation.

The Inspection Activities Department is based at Trnava, near the Bohunice nuclear power station, while the Safety Policy and International Co-operation Department is located at the Bratislava headquarters. There are also two inspection units located at the nuclear power plant sites.

The regulatory powers of ÚJD cover the following areas:

- the safety of nuclear installations;
- radioactive waste management;
- safeguards and control over nuclear and dual-use materials;
- quality assurance programmes;
- international agreements and obligations in the field of nuclear safety and nuclear materials.

A significant number of central bodies in the Slovak State administration are involved in various activities related to nuclear safety. The following are particularly relevant:

- the Ministry of Economy is responsible for the promotion and development of the nuclear power programme and for preparing related legislation;

- the Ministry of Health is responsible for the adoption and control of radiation protection measures inside nuclear installations and off-site;

- the Ministry of the Environment, which has control over regional offices which grant site, construction and operating licences and operate the environmental radiation monitoring network, is responsible for environmental impact assessments. The Minister for the Environment also chairs the Government Commission for Radiological Emergencies;

- the Ministry of the Interior, which is responsible for fire protection, physical protection of nuclear materials and facilities, civil defence during radiological accidents and for assistance in case of a nuclear accident or radiological emergency;

- the State Office for Occupational Safety.

The Nuclear Power Plant Research Institute *(Vyskumny Ustav Jadrovych Elekrarni Trnava a.s.*, or VUJE*)* is involved in the research and development of nuclear safety. The Institute also conducts training for the employees of the nuclear power plants at Trnava. The training of personnel at the Mochovce plant will be carried out with a full-scale simulator which is located on site.

Legislation in Force

The legal structure for the regulation of nuclear safety in the Slovak Republic consists of a combination of laws adopted prior to the creation of the Slovak Republic and of new laws adopted since its independence.

Adopted following the creation of the Slovak Republic, Act No. 2/1993 identifies the responsibilities and tasks of the Nuclear Regulatory Authority (ÚJD) and grants it autonomy in nuclear safety matters. It lists the ÚJD's different activities, which include State supervision of nuclear materials (safeguards), in accordance with the Treaty on the Non-Proliferation of Nuclear Weapons and responsibility for the early notification of nuclear accidents.

Act No. 28/1984 on State Supervision of the Safety of Nuclear Installations aims to ensure nuclear safety, secure public health and prevent environmental damage. The Act governs the construction and operation of nuclear installations including licensing, for which the ÚJD is the competent authority.

The Regional Environmental Offices, which are under the authority of the Ministry of the Environment, 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. The responsibilities of these bodies in respect of licensing are defined in Act No. 50/1976 (Civil Code), Decree No. 2/1978 and No. 4/1979 of the Czechoslovak Atomic Energy Commission (CSAEC) and Decree No. 378/1992 of the Ministry of the Environment.

Act No. 127/1994 of the National Council governs mandatory environmental impact assessments and authorises the Ministry of Environment to evaluate all proposals for the construction of or technical changes to nuclear installations, which might have an adverse effect on the environment.

The former Czechoslovakia did not have legislation dealing specifically with nuclear third party liability, but the Civil Code applied to especially dangerous activities. This legislation is applicable for the time being in the Slovak Republic, as is the 1963 Vienna Convention on Civil Liability for Nuclear Damage.

With respect to radioactive waste management, the ÚJD is responsible for supervising radioactive waste originating from nuclear installations and for repositories for all types of radioactive waste. The Ministry of Health is designated as the responsible authority for supervising radioactive waste originating from all other sources until their treatment and transportation for final disposal.

Act No. 254/1994 and Decree No. 14/1995 establish a State Fund for the decommissioning of nuclear power plants and the management of spent fuel and radioactive waste arising from their decommissioning. The Act was adopted by the Parliament on 25 August 1994. It entered into force on 1 January 1995.

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, bank and State funding, and other sources.

Regulation No. 67/1987 of the former Czechoslovak Atomic Energy Commission lays down the basic technical and organisational requirements for ensuring nuclear safety and the prevention of releases of radioactivity into the environment (in the course of radioactive waste management). It also sets out mandatory radioactive waste management procedures for authorities, organisations and their staff involved in the design, commissioning, operation or decommissioning of nuclear facilities, including the basic safety requirements for all steps of radioactive waste management, such as collection, segregation, storage, treatment, conditioning and finally, the disposal of radioactive waste. The Regulation furthermore stipulates the requirements for the documentation on safety which must be provided with a licence application for the siting, construction and operation of nuclear facilities.

With respect to nuclear safety, Act No. 28/1984 on State Supervision on Nuclear Safety of Nuclear Installations is still in force. In addition, there are many decrees which regulate safety in design, licensing, construction, siting and operation of nuclear facilities (Decrees of CSAEC No. 2/1978, No. 4/1979 and No. 6/1980), which regulate quality assurance of selected items of nuclear installations (Decree of CSAEC No. 436/1990), which regulate the terms and conditions of selected staff qualification verification (Decree of CSAEC No. 191/1989), which ensure nuclear safety in the course of radioactive waste management (Decree of CSAEC No. 67/1987) and, finally, which ensure safety during the testing of devices for nuclear material transport and disposal (Decree of CSAEC No. 8/1981).

Act No. 290/1996 on the Safety of the Health of the Population lays down the requirements for radiation protection based on the International Commission for Radiological Protection (ICRP) and IAEA standards in this area.

The current legislative framework for State control of exports and imports of nuclear materials and sensitive items, such as dual-use items, is governed by Regulation No. 28/1977 on accounting and control of nuclear materials, Act No. 547/1990 on the management of special substances and their control, and by Regulation Nos. 50/1990 and 505/1992. The latter Regulation also deals with dual-use items.

Act No. 547/1990 specifies that the Ministry of Economy is the authority with jurisdiction to issue export/import licences for nuclear materials and other sensitive items, while the official contact point for international bodies dealing with non-proliferation regimes such as the Nuclear Suppliers Group or the Zangger Committee is the ÚJD.

Finally, the physical protection of nuclear installations and nuclear materials is governed by Decree No. 100/1989 of the Czechoslovak Atomic Energy Commission, which was endorsed by the Slovak Republic.

Draft legislation and regulations

- A draft Law on the Peaceful Uses of Nuclear Energy to replace Law No. 28/1984 is currently being prepared under the responsibility of the ÚJD. Its adoption is expected in 1998. The draft Law specifies the conditions for the safe use of nuclear energy exclusively for peaceful purposes, in accordance with the various international agreements concluded by the Slovak Republic. It also contains provisions dealing with liability for nuclear damage.

- The Slovak Republic is also preparing an amendment of the Law on the State Fund for nuclear facilities being decommissioned and the management for spent fuel and radioactive waste.

- A draft Governmental Decree on Radiation Protection is under preparation by the Ministry of Health which will replace Regulation No. 65/1972 of the Czechoslovak Ministry of Health governing the protection of workers, the public and the environment against ionising radiation sources.

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 on 7 June 1995.

  - The Slovak Republic acceded to the 1988 Joint Protocol on the Application of the Vienna Convention and the Paris Convention on 7 March 1995, and it entered into force on 7 June 1995.

- **Other Conventions**

  - 1960 Convention concerning the Protection of Workers against Ionising Radiation, was succeeded to on 1 January 1992 and entered into force on 1 January 1993;

  - 1963 Treaty Banning Nuclear Weapons Tests in the Atmosphere, in Outer Space and under Water, was succeeded to on 1 January 1993 and entered into force on the same date;

- 1968 Treaty on the Non-Proliferation of Nuclear Weapons, was succeeded to on 1 January 1993 and entered into force 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, was succeeded to on 1 January 1993 and entered into force on the same date;

- 1979 Convention on the Physical Protection of Nuclear Material, was succeeded to on 10 February 1993 and effectively entered into force on 1 January 1993;

- 1986 Convention on Early Notification of a Nuclear Accident, was succeeded to on 10 February 1993 and effectively entered into force on 1 January 1993;

- 1986 Convention on Assistance in Case of a Nuclear Accident or Radiological Emergency, was succeeded to on 10 February 1993 and effectively entered into force on 1 January 1993;

- 1994 Convention on Nuclear Safety was ratified on 7 March 1995 and entered into force on 24 October 1996;

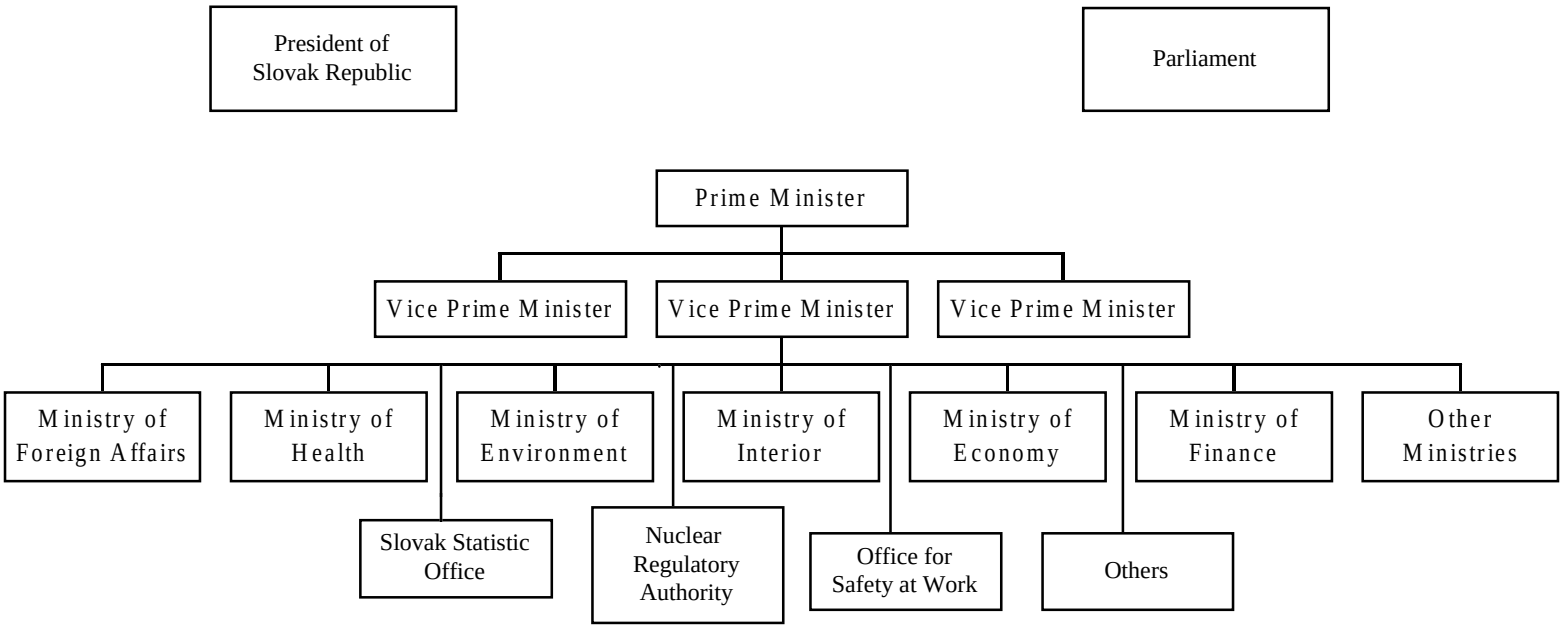
- 1996 Comprehensive Nuclear Test Ban Treaty was signed on 30 September 1996;

- 1997 Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management was signed on 30 September 1997.

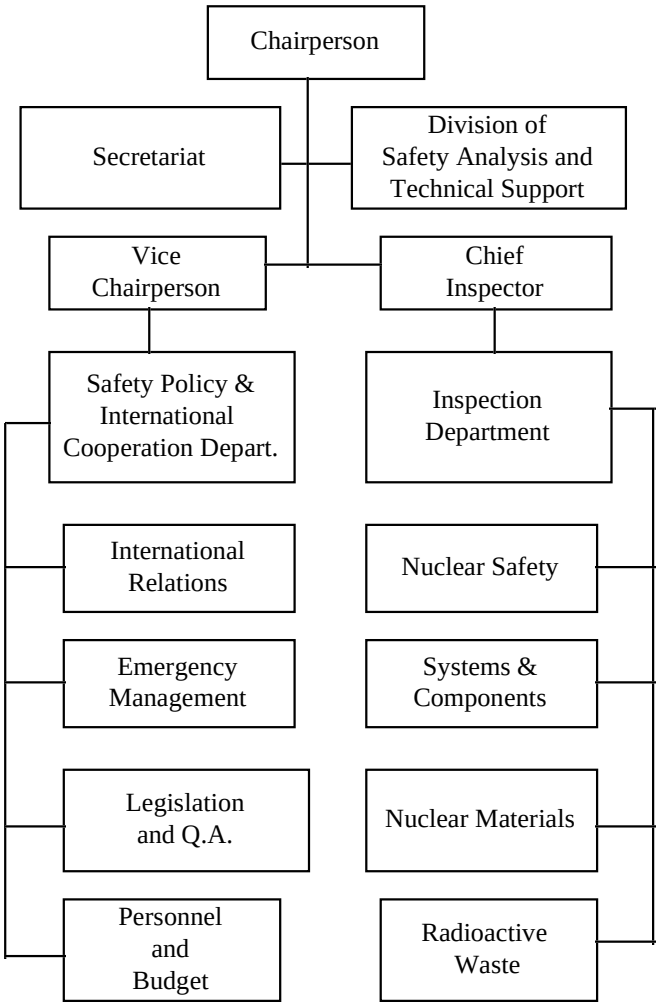
Membership in Nuclear Organisations

The Slovak Republic joined the International Atomic Energy Agency (IAEA) on 27 September 1993, and the Slovak Power Plants plc is a member of the World Association of Nuclear Operators (WANO). The Slovak Republic joined the Nuclear Suppliers Group and the Zangger Committee.

SLOVAK REPUBLIC
Competent Authorities for Nuclear Energy



SLOVAK REPUBLIC
Nuclear Regulatory Authority (NRA)



SLOVENIA

Introduction

Slovenia has one nuclear power plant in operation (a PWR-664 model of 632 MWe), at Krsko in south-east Slovenia, which commenced operations in 1981. The plant is jointly owned by Slovenia and Croatia and supplies both countries with electricity. The installation is operated by the Slovenian utility *Nuklearrna Elektrarna Krsko*.

Slovenia also possesses a Triga-type research reactor (250 kWth) near Ljubljana and a uranium mine, *Zirovski Vrh*, which is being decommissioned for economic reasons following a Government decision in 1992.

There are no waste disposal repositories. Slovenia does, however, have a storage facility at the Krsko site for waste from the nuclear power plant, and an interim storage facility at the Research Reactor Centre near Ljubljana for low and intermediate level waste originating from all other producers of radioactive waste.

Competent Nuclear Authorities

In 1991, the former Slovene Nuclear Safety Administration (SNSA) was completely reorganised. Previously an autonomous regulatory body responsible only to the Government, it now falls under the authority of the Ministry of the Environment and Physical Planning. The Administration is managed by a Director, confirmed by the Government upon nomination by the Ministry.

The Slovenian Nuclear Safety Administration is divided into five Departments, as follows:

- the Nuclear Safety Inspectorate;
- the Nuclear Safety Department;
- the Radiation Safety Department;
- the Nuclear and Radioactive Materials Department; and
- the Legal and International Co-operation Department.

The Nuclear Safety Inspectorate's primary mission is to verify, by inspection, that nuclear power plants are in compliance with existing rules and regulations, during both their construction and operation. The Inspectorate therefore determines whether licence holders are adhering to the safety requirements contained in 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 on a weekly basis.

The Nuclear Safety Department is divided into two sections which reflect its main functions. The first deals with licences; the second analyses for which purposes such licences are used.

The Radiation Safety Department verifies radiation safety at nuclear installations and is responsible for radiation dosimetry control, radiation monitoring, and for early notification in case of a nuclear or radiation accident. The Department works directly with the Ministry of Health, which is responsible for radiation protection (with the exception of the protection of nuclear installations, themselves). Within this Department there are two sections, one for analyses and one for monitoring.

The Nuclear and Radioactive Materials Department deals with trade, transport and treatment of nuclear and radioactive materials. It is responsible for the physical protection of nuclear power plants and nuclear materials. It also handles questions regarding 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.

There are two expert commissions attached to the SNSA: the Nuclear Safety Expert Commission, which has an advisory role with regard to the annual report of the SNSA, important licences issued to nuclear facilities, draft laws, and regulations for physical protection of nuclear materials and facilities, etc.), and, the Expert Commission for Operators' Exams which organises examinations and recommends that the SNSA grant or extend licenses to nuclear plant personnel.

The Legal and International Co-operation Department co-operates with various Ministries and prepares documents for the Government and the Parliament. This Department is also involved with licensing procedures and the preparation of legislation on nuclear and radiation safety and on nuclear third party liability.

The Act of November 1994 (Off. Gaz. 71/94) on the organisation and assignment of ministerial responsibilities, redefines the SNSA's main responsibilities as the following:

- nuclear and radiological safety in nuclear installations;
- trade in and transport of nuclear and radioactive materials;
- safeguards for nuclear installations and materials;
- physical protection of nuclear installations and materials;
- liability for nuclear damage;
- licensing of operators and personnel of nuclear installations;
- quality assurance;
- radiological monitoring;
- inspections;
- early notification in the case of a nuclear or radiological accident;

– international co-operation in the field of nuclear safety.

Thus, the SNSA is responsible for issuing and amending licences for all nuclear facilities and performs regular inspection at those facilities. The rules applicable to public administration are defined in various laws, applied by the relevant regulatory bodies:

– the Act on Administrative Procedures (Off. Gaz. 7/86) which deals with all the official legal procedures to be followed by the Ministries and other regulatory bodies;

– the Act on the Government (Off. Gaz. 4/93) which regulates the relations between the Prime Minister, the different Ministries and the heads of other regulatory bodies in the Government;

– the Act on Administrative Disputes of 1 August 1997, which shall enter into force in January 1998;

– the Act on Administration (Off. Gaz. 67/94) which deals mainly with the territorial division of the Slovenian administration at both national and local levels and sets out the general powers and responsibilities of inspectors; and

– the Criminal Act of 1994 (Off. Gaz. 63/94; 70/94) and the Act on Minor Offences of 1993 (Off. Gaz. 66/93) are applicable to criminal conduct and minor civil offences.

Other Relevant Organisations

The Agency for Radioactive Waste Management was created in 1991 by the Slovenian Government. Its main objective is to manage the 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 final repository of radioactive wastes; 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 public relations and education. The Agency's mandate was extended by the Government in 1996 to include, *inter alia*, interim storage of medical and industrial wastes.

Slovenia has established a National Notification Centre (NNC) which is responsible for notification procedures in the event of a radiological emergency, in accordance with the National Plan for Protection and Rescue in the Case of a Nuclear Accident at Krsko. The notification procedure depends of the level of the emergency, but in all cases the NNC should notify the Slovenian Nuclear Safety Administration and the National Civil Protection and Rescue Administration.

As regards insurance for nuclear third party liability, Slovenian insurers established in March 1994, the Nuclear Insurance and Reinsurance Pool, consisting of specialised insurance and reinsurance companies (*Sava Re*). The Pool, which is located in Ljubljana, is based on the fundamental principles common to all nuclear pools.

Finally, the Josef 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 and a temporary storage facility created in 1986 for low and intermediate radioactive waste from small users, such as hospitals. The Institute has an independent Radiation Protection Group, responsible to the Director of the Institute, which develops criteria for and advises on the personal dosimetry of radiation workers, environmental monitoring and the control of radioactive sources in radioactive waste storage facilities.

Legislation in Force

- **Laws on Nuclear Energy**

The Constitutional Law on Enforcement of the Basic Constitutional Charter on the Autonomy and Independence of the Republic of Slovenia adopted on 23 June 1991 (Off. Gaz. 1/91) provides that all the laws adopted by the Yugoslav (federal) authorities in the past, which are not incompatible with the Slovene legal system, will remain in force in the Republic of Slovenia pending the adoption of appropriate legislation by its Parliament.

Accordingly, legislation on nuclear energy in Slovenia is made up of the following previous laws:

- Act of 19 April 1978 on liability for nuclear damage*;
- Act on insurance for liability for nuclear damage (Off. Gaz. 12/80);
- Act of 5 November 1980 on protection against ionising radiation and measures for the safety of nuclear facilities and equipment (Off. Gaz. 28/80);
- Act of 21 November 1984 on radiation protection and the safe use of nuclear energy**;
- Act on the transport of dangerous substances (Off. Gaz. 27/90);
- Act on sanitary protection (Off. Gaz. 8/73; 9/85);
- Act on decommissioning fund (Off. Gaz. 75/94);
- Decree on setting up the radioactive waste agency (Off. Gaz. 5/91 and Off. Gaz. 45/96); and
- Regulations adopted in implementation of the above laws.

Other relevant legislation consists of the body of regulations on civil protection defined by the 1994 Act on Protection Against Natural Disasters or Other Disasters (Off. Gaz. 46/94), which superseded the Act on Defence and Civil Protection (Off. Gaz. 15/91).

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* The full text in English of this Act was reproduced in the Supplement to *Nuclear Law Bulletin* No. 23 (June 1979).

** The full text in English of this Act was reproduced in the Supplement to *Nuclear Law Bulletin* No. 36 December 1985).

- **Radiation Protection and Nuclear Safety Law**

The Law on Radiation Protection and the Safe Use of Nuclear Energy was adopted on 21 November 1984. This Law sets out the requirements for protection against the effects of ionising radiation and nuclear safety measures. It contains general definitions, measures for ionising radiation protection, special safety measures for nuclear facilities and nuclear materials, rules concerning surveillance, competent authorities, inspection and penalties. The Law also contains provisions with respect to the responsibility of the licence holder, quality assurance, assessment and verification of safety (during siting, construction, commissioning and operation of a nuclear installation), physical protection, the import and export of radioactive and nuclear material, safeguards, dose limits and other matters.

Regarding emergency preparedness, the Law requires each licensee to have in place an emergency plan and protection measures in the event of a nuclear accident, and to notify, without delay, the competent body on radiological dangers. The emergency plan for protecting the public in the event of an accident at a nuclear installation should be incorporated in a final safety analysis report, in accordance with the Regulation on the Preparation and Content of Safety Analysis Reports. The Law also contains provisions with respect to the evacuation of the public in emergency situations and the functions of civil defence in response thereto.

In implementing this Law, several regulations on nuclear safety and radiation protection were adopted, which concern, *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., No. 40/86 and No. 45/89);
- occupational conditions for radiation workers (Off. Gaz. No. 40/86);
- dose limits to the public and to radiation workers (Off. Gaz. No. 31/89, No. 63/89).

- **Environmental Protection Act**

The Environmental Protection Act was adopted in 1993. The Act is implemented by approximately 50 regulations and decrees.

Draft Legislation and Regulations

A draft Law on Nuclear and Radiological Safety was prepared in 1993 and it will, when adopted, replace the 1984 Law on Radiation Protection and the Safe Use of Nuclear Energy.

The 1978 Act on Liability for Nuclear Damage is currently under revision. A draft Law on Third Party Liability for Nuclear Damage was prepared in 1993 which aims to conform to the provisions of the revised Vienna Convention (Protocol) and which contains provisions currently incorporated in the 1978 Act and in the Act on Insurance of Liability for Nuclear Damage. It also contains new provisions concerning, *inter alia*, the allocation of funds in the event nuclear damage exceeds the maximum amount of liability of the operator per nuclear incident.

International Conventions

- **Nuclear Third Party Liability**

  - Slovenia succeeded to the 1963 Vienna Convention on Civil Liability for Nuclear Damage on 7 July 1992, and it effectively entered into force on 25 June 1991.

  - Slovenia acceded to the 1988 Joint Protocol on the Application of the Vienna Convention and the Paris Convention on 27 January 1995, and it entered into force on 27 April 1995.

- **Other Conventions**

  - 1963 Treaty Banning Nuclear Weapons Tests in the Atmosphere, in Outer Space and under Water, was succeeded to on 7 April 1992 and entered into force on the same date;

  - 1968 Treaty on the Non-Proliferation of Nuclear Weapons, was succeeded to on 7 April 1992 and entered into force 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, was succeeded to on 7 April 1992 and entered into force on the same date;

  - 1980 Convention on Physical Protection of Nuclear Material, was succeeded to on 7 July 1992, and it effectively entered into force on 25 June 1991;

  - 1986 Convention on Early Notification of a Nuclear Accident, was succeeded to on 7 July 1992, and it effectively entered into force on 25 June 1991;

- 1986 Convention on Assistance in Case of a Nuclear Accident or Radiological Emergency, was succeeded to on 7 July 1992, and it effectively entered into force on 25 June 1991;

- 1994 Nuclear Safety Convention was ratified on 20 November 1996 and entered into force on 18 February 1997;

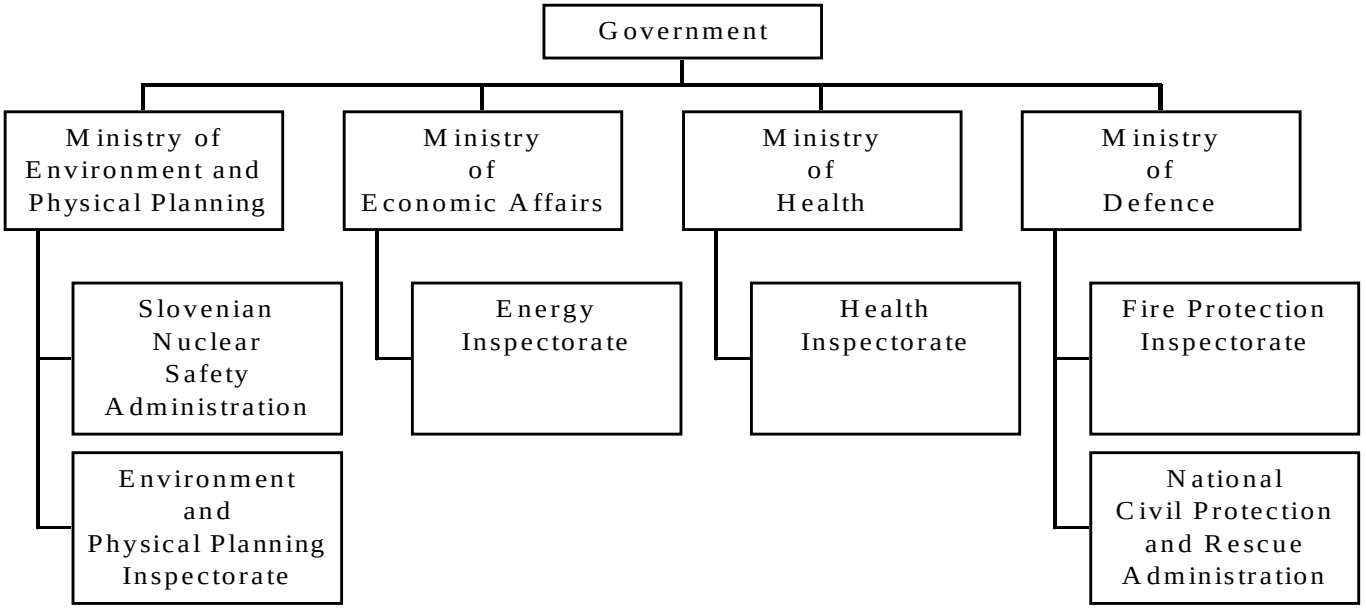
- 1996 Comprehensive Nuclear Test Ban Treaty was signed on 24 September 1996;

- 1997 Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management was signed on 29 September 1997.

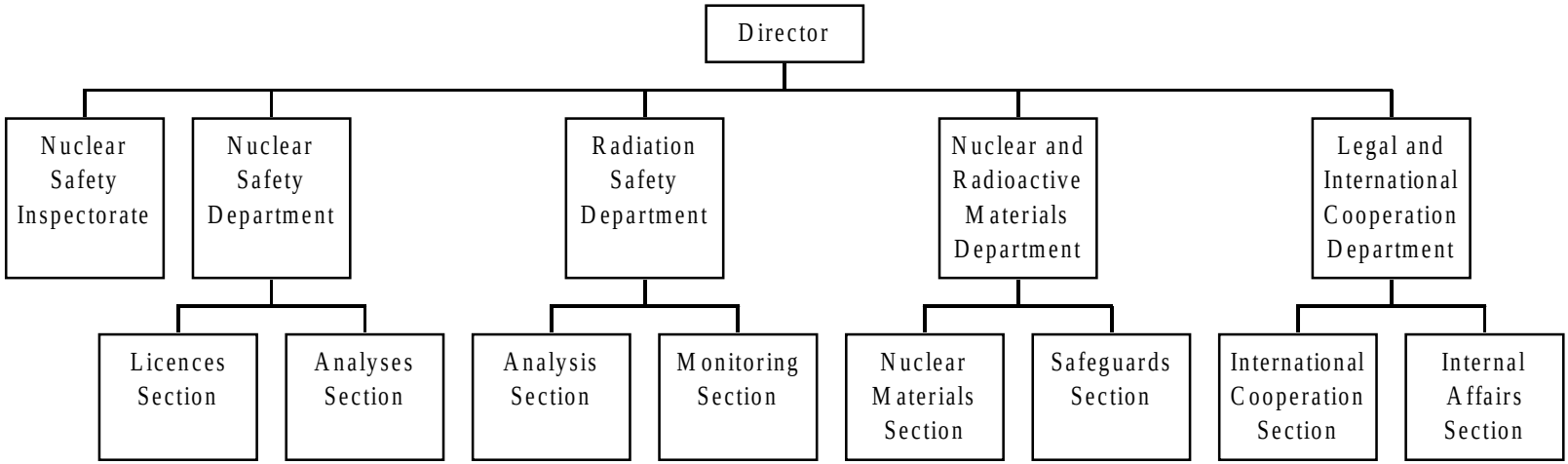
Membership in Nuclear Organisations

Slovenia joined the International Atomic Energy Agency (IAEA) on 21 September 1992, and *Nukelarna Elektrarna Krsko* is a member of the World Association of Nuclear Operators (WANO).

SLOVENIA
Competent Authorities for Nuclear Energy



SLOVENIA
Slovenian Nuclear Safety Administration



UKRAINE

Introduction

There are 14 nuclear power reactors in operation at five sites in Ukraine with an installed capacity of 12,880 MWe. The oldest nuclear reactor operating in Ukraine, Chernobyl Unit 1 (RMBK of 1000 MWe), came into operation in 1977 and was shut down on 30 November 1996; the newest reactor, Zaporojie Unit 6 (VVER-1000), came into operation in 1995.

The Chernobyl nuclear power station has one operating reactor, the Khmelnitskiy station also has one, the Rovno nuclear power station has three, the South Ukraine station has three, and the Zaporojie station has six in operation. Five units are currently under construction.

In addition, Ukraine possesses several research reactors, including the research reactor (WWR-M Kiev) operated by the Institute for Nuclear Research of the Academy of Science.

Competent Nuclear Authorities

The State Committee on Nuclear and Radiation Safety, set up by Government Decree No. 52 of 3 February 1992, was the regulatory authority for nuclear safety in Ukraine until December 1994. At that time, its responsibilities were transferred to a new Ministry of Environmental Protection and Nuclear Safety, created by Decree No. 768 of the President of Ukraine on 15 December 1994.

The main objective of this Ministry is to strengthen environmental protection and to establish a more efficient safety system for activities involving the use of nuclear energy and nuclear technologies. Regulatory responsibilities have been separated from management tasks, leading to a Ministry which consists of:

- the Nuclear Regulatory Administration which establishes regulations and standards; and is responsible for issuing licences for nuclear activities;

- the Nuclear Safety Inspectorate, which is responsible for implementing State control over licensees and establishing programmes to ensure the safety of nuclear power plants; and

- the Environmental and Radiation Safety Inspectorate, which is responsible for regulating emissions of ionising radiation and the use of radioactive sources in the medical, industrial and research & development sectors.

Presided over by the First Deputy to the Minister for Environmental Protection and Nuclear Safety, who is directly appointed by the President, the Nuclear Regulatory Administration is the section with the greatest autonomy.

Both the Nuclear Safety Inspectorate and the Environmental and Radiation Safety Inspectorate are headed by Chief Inspectors appointed by the Council of Ministers.

In October 1996 the President of Ukraine decided to establish a State-owned company called Energoatom to take over from the Goskomatom all of the assets of existing nuclear power plants in operation, except for Chernobyl (Resolution of the Council of Ministers of 17 October 1996). The Goskomatom was incorporated into the Ministry of Energy as a Department for the Use of Nuclear Energy.

Energoatom will be the main producer of nuclear generated electricity in Ukraine and will be responsible for its distribution, the management of radioactive waste and for decommissioning, with the possibility of its delegating operational responsibilities to each individual nuclear power plant operator. The company is managed by a President, Vice-President and Board of Directors, appointed by the Council of Ministers.

Energoatom will be the "operator" for the purpose of the nuclear liability regime under the 1995 Law on the Uses of Nuclear Energy and Radiation Safety. Energoatom will also be the operating organisation for the VVER reactors to be built at Rivne and Khmelnyskiy. Once Energoatom is operational, the role of Goskomatom will be limited to matters of State policy in the field of nuclear energy.

The Ministry of Health is responsible for establishing radiation protection regulations and standards including occupational exposures to radiation. The Ministry of Internal Affairs is charged with the physical protection of nuclear materials and installations. Moreover, pursuant to the Presidential Decree of 26 July 1996, the Ministry responsible for settling the consequences of the Chernobyl accident and the Ministry of Civil Defence merged to form a new Ministry of Emergency Situations. By Decree of 6 May 1997, the President of Ukraine set up the Ministry of Energy. The Science and Technology Centre of Ukraine is responsible for conducting research and analyses in the area of nuclear energy.

By Decree of 26 April 1996, the President of Ukraine created a Chernobyl Centre for Nuclear Safety, Radioactive Waste and Radioecology. The purpose of the Centre is to promote international scientific research into the effects of nuclear and radiation accidents and the improvement of rehabilitation procedures for environmentally contaminated areas.

Legislation in Force

The *Verkhovna Rada* (Parliament of Ukraine) has recently adopted two nuclear laws: the Law of the Ukraine on the Uses of Nuclear Energy and Radiation Safety* of 8 February 1995 and the Law of the Ukraine on Radioactive Waste Management of 30 June 1995.

The Law on the Uses of Nuclear Energy and Radiation Safety (No. 40/95) entered into force on 21 March 1995. It lays down basic principles for 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.

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* The full text in English of this Law was reproduced in the Supplement to *Nuclear Law Bulletin* No. 56 (December 1995).

The Law applies to the following activities:

- the construction, commissioning, operation and decommissioning of nuclear installations;
- the 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;
- physical protection of nuclear installations and materials; and
- co-operation with respect to the 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 as well as for the dissemination of such information by the organisations and institutions concerned.

As regards nuclear third party liability, the Law on the Uses of Nuclear Energy and Radiation Safety provides for the strict liability of the nuclear operator. The sole exceptions to this principle are for cases of *force majeure*, armed conflict or civil war. This Law, however, does not expressly provide for the exclusive liability of the operator, nor does it fix the amount of the operator's liability.

As regards insurance against nuclear liability risks, the Ukrainian insurers established a Nuclear Insurance Pool in the spring of 1996. It consists of specialised insurance and reinsurance companies and is located in Kiev. It was registered at the Ministry of Justice of Ukraine in January 1997 in order to obtain legal status. The Ukrainian Parliament adopted, on 3 December 1997, the Act on Changes of and Amendments to some Legislative Acts of Ukraine in Connection with the Adoption of the Law of Ukraine on Accession to the Vienna Convention on Civil Liability for Nuclear Damage. It will enter into force upon its signature by the President.

The purpose of the Law on Radioactive Waste Management (No. 256/95) is to protect humans and the environment against the hazards of radioactive waste. It establishes the basic principles of State policy in the management of such waste. In particular, it contains provisions dealing with storage operations and with the setting up 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 Council of Ministers. In the event of an accident involving waste, its owner is held liable and must eliminate the source and mitigate the resulting damage.

Finally, pursuant to Parliamentary Resolution No. 148 of 26 April 1995, the Council of Ministers is authorised to provide guarantees of exemption from nuclear third party liability to foreign companies, eg., suppliers of equipment and services for nuclear installations.

The following regulations should also be noted: the Presidential Decree of 28 December 1993 on the physical protection of materials and nuclear installations, the Decision of the Council of Ministers of 27 January 1993 on the transport of radioactive substances, the Decision of the Council of Ministers of 12 April 1992 on the fuel cycle, and finally, the Decision of the Council of Ministers of

11 August 1995 establishing a State agency responsible for the physical protection of nuclear materials and installations.

In addition, there are various temporary regulations dealing with licensing procedures for the management of radioactive waste (1993), the transport of radioactive substances (1994), the extraction of radioactive minerals and the production and utilisation of radioactive sources (1994). Lastly, there are several safety Codes, inherited from the former Soviet Union, which deal with the following matters:

- radiological safety (NRB-76/87);
- the safety of nuclear plants (OPB-88 and PBJ RU-89);
- physical protection in the course of transport (OPB-83);
- protection against radioactive substances and sources (OSP-72/87); and
- health protection relative to radioactive waste management (SPORO-85)

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 preparing a number of draft laws. The main drafts under consideration are:

- draft Law on Protection of the Public Against Radiation;
- draft Law on Amendments of other Ukrainian general laws resulting from the adoption of the 1995 Law on the Use of Nuclear Energy and Radiation Safety, such as the Civil Code, Civil Procedure Code, Administrative Code and Insurance Law;
- draft Law concerning Uranium Ore Mining, Processing and Production;
- draft Law on the Ratification of the Safeguards Agreement between Ukraine and the IAEA with respect to the Non-Proliferation Treaty;
- 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 Licensing in the Nuclear Energy Sector;
- draft Law on Physical Protection of Nuclear Materials;
- draft Law on Ratification of the Nuclear Safety Convention ;

- 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; and

- draft Law on the Energy Sector.

International Conventions

- **Nuclear Third Party Liability**

  - Ukraine acceded to the 1963 Vienna Convention on 20 September 1996, and it entered into force on 20 December 1996 (Decree of 12 July 1996, entered into force on 3 August 1996). Ukraine also signed on 29 September 1997, the Protocol to Amend the Vienna Convention on Civil Liability for Nuclear Damage.

  - Ukraine also signed, on 29 September 1997, the Convention on Supplementary Compensation for Nuclear Damage.

- **Other Conventions**

  - 1960 Convention concerning the Protection of Workers against Ionising Radiation, was ratified on 19 June 1968 and entered into force on 19 June 1969;

  - 1963 Treaty Banning Nuclear Weapons Tests in the Atmosphere, in Outer Space and under Water was ratified on 30 December 1963 and entered into force on the same date;

  - 1968 Treaty on the Non-Proliferation of Nuclear Weapons was acceded to on 5 December 1994 and entered into force 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 was signed on 3 September 1971 and entered into force on 18 May 1972;

  - 1980 Convention on Physical Protection of Nuclear Material was acceded to on 6 July 1993 and entered into force on 5 August 1993;

  - 1986 Convention on Early Notification of a Nuclear Accident was ratified on 26 January 1987 and entered into force on 26 February 1987;

  - 1986 Convention on Assistance in Case of a Nuclear Accident or Radiological Emergency was ratified on 26 January 1987 and entered into force on 26 February 1987;

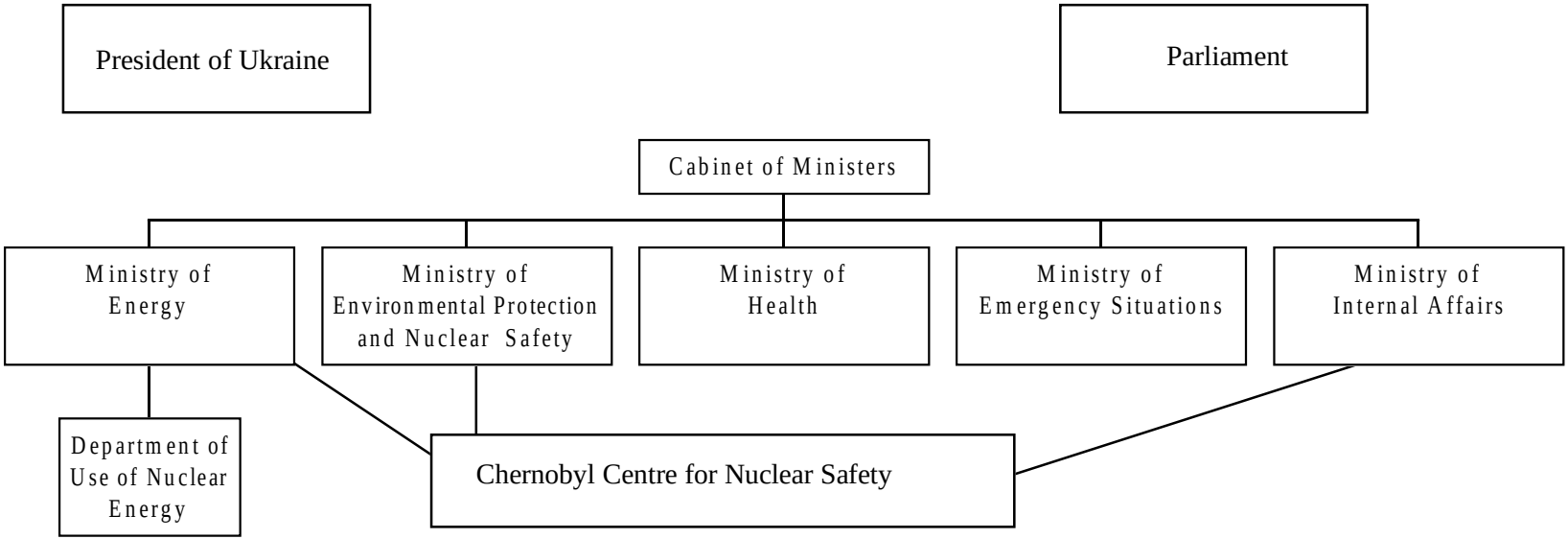
  - 1994 Nuclear Safety Convention was signed on 20 September 1994;
  - 1996 Comprehensive Nuclear Test Ban Treaty was signed on 27 September 1996.

– 1997 Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management.

Membership in Nuclear Organisations

Ukraine joined the International Atomic Energy Agency (IAEA) on 31 July 1957 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



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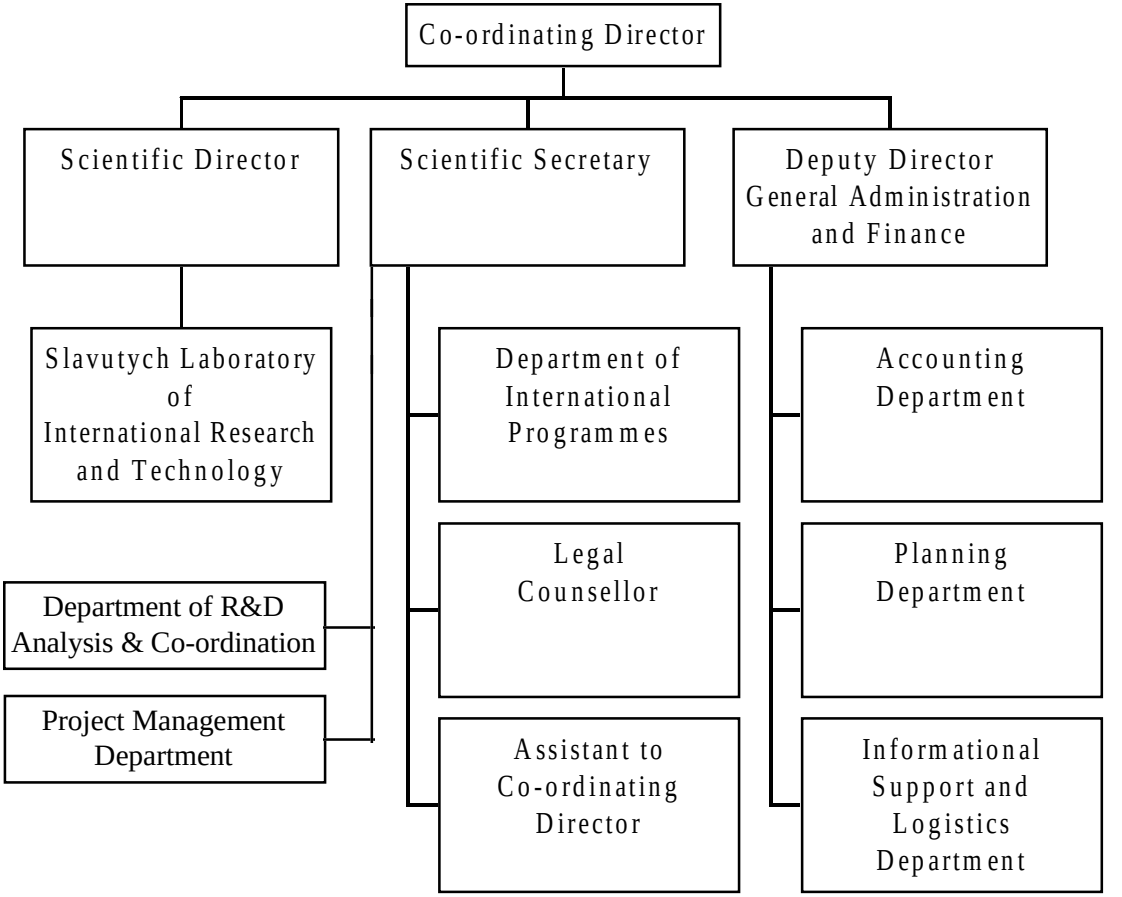

PARTICIPATION IN INTERNATIONAL NUCLEAR TREATIES

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	1979 Physical Protection Convention	1986 Early Notification Convention
Armenia	NO	YES	YES	YES	NO	YES	YES
Belarus	YES	SIGNED	YES	YES	YES	YES	YES
Bulgaria	NO	YES	YES	YES	YES	YES	YES
Croatia	NO	YES	YES	YES	YES	YES	YES
Czech Republic	YES	YES	YES	YES	YES	YES	YES
Estonia	NO	YES	NO	YES	NO	YES	YES
Hungary	YES	YES	YES	YES	YES	YES	YES
Kazakstan	NO	NO	NO	YES	NO	NO	NO
Latvia	YES	YES	NO	YES	YES	NO	YES
Lithuania	NO	YES	NO	YES	NO	YES	YES
Poland	YES	YES	YES	YES	YES	YES	YES
Romania	NO	YES	YES	YES	YES	YES	YES
Russia	YES	SIGNED	YES	YES	YES	YES	YES
Slovak Republic	YES	YES	YES	YES	YES	YES	YES
Slovenia	NO	YES	YES	YES	YES	YES	YES
Ukraine	YES	YES	YES	YES	YES	YES	YES

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 Mgmt. of Spent Fuel/Waste
Armenia	YES	SIGNED	SIGNED	SIGNED	NO	NO	NO
Belarus	YES	NO	NO	SIGNED	NO	NO	NO
Bulgaria	YES	YES	YES	SIGNED	NO	NO	NO
Croatia	YES	YES	YES	SIGNED	NO	NO	NO
Czech Republic	YES	YES	YES	SIGNED	NO	NO	SIGNED
Estonia	YES	YES	NO	SIGNED	NO	NO	NO
Hungary	YES	YES	YES	SIGNED	SIGNED	NO	SIGNED
Kazakstan	NO	NO	SIGNED	SIGNED	NO	NO	SIGNED
Latvia	YES	YES	YES	SIGNED	NO	NO	NO
Lithuania	NO	YES	YES	SIGNED	SIGNED	SIGNED	SIGNED
Poland	YES	YES	YES	SIGNED	SIGNED	NO	SIGNED
Romania	YES	YES	YES	SIGNED	SIGNED	SIGNED	SIGNED
Russia	YES	NO	YES	SIGNED	NO	NO	NO
Slovak Republic	YES	YES	YES	SIGNED	NO	NO	SIGNED
Slovenia	YES	YES	YES	SIGNED	NO	NO	SIGNED
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