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NUCLEAR LEGISLATION IN OECD COUNTRIES

Regulatory and Institutional Framework for Nuclear Activities

Czech Republic

ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT

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

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

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CZECH REPUBLIC

This chapter was last revised in 2003 and is correct as of that date.

The NEA Secretariat is currently revising this chapter in close consultation with the national authorities and plans to issue a new version in the near future.

CZECH REPUBLIC

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I. GENERAL REGULATORY REGIME

1. Introduction

On 1 January 1993, Czechoslovakia was divided into the Slovak Republic and the Czech Republic. To ensure a smooth and continuous transition, it was agreed that all acts, regulations and decisions in the field of nuclear energy and ionising radiation would continue to apply until subsequent legislation was enacted. Since then, multiple acts and regulations have been adopted to establish a comprehensive legal system in this field.

In the Czech Republic, nuclear power generated electricity already constitutes more than 40% of the country's supply (2002). There are two nuclear power stations, at Dukovany in South Moravia and at Temelin in South Bohemia. The Dukovany nuclear power plant has four operational units (VVER-440/213), each of which has a thermal power of 1 375 MWt, representing a total installed capacity of 1 760 MWe. The Temelin nuclear power plant has two operational units (VVER-1000), the first of which began trial operation in mid-2002. The construction of Temelin 2 has been completed and it began trial operation on full power (1 000 Mwe) in April 2003. The two units will each have a thermal power of 3 000 MWt, representing a total installed capacity of 1 962 Mwe.

In addition, the Czech Republic has three research reactors, several radioactive waste storage facilities and a spent fuel interim storage facility and low-level radioactive waste repository, both of which are operated at Dukovany. Finally, the Czech Republic has also uranium ore mining and production facilities and Diamo, a state-owned company, acts as operator of all the uranium production facilities.

In the former Czechoslovakia, the predominant regulatory body was the Czechoslovak Atomic Energy Commission. By Constitutional Act No. 4/1993 of 15 December 1992, the functions and responsibilities of the Commission were transferred to the State Office for Nuclear Safety (*Státní úrad pro jadernou bezpečnost – SÚJB*), which is the state supervisory and regulatory body responsible for the safe use of nuclear energy and ionising radiation for peaceful purposes.

The general act governing all activities in the field of nuclear energy was adopted on 24 January 1997, and is entitled Act on the Peaceful Uses of Nuclear Energy and Ionising Radiation and on Amendments and Additions to Related Acts [No. 18/1997] (the Atomic Act). The act fully entered into force on 1 July 1997 and has been amended several times since then. One of the most important amendments was made by Act No. 13/2002, which aims to ensure full compliance of the Czech legislation in the nuclear field with EU law. It entered into force on 1 July 2002 with the exception of certain provisions which will enter into force upon the date of accession of the Czech Republic to the European Union.

The main purpose of the 1997 Act is to create the legal basis for the regulation of all activities involving the utilisation of nuclear energy and ionising radiation, and to protect the public and the environment against their harmful effects. The act aims to ensure that nuclear energy and ionising radiation are used exclusively for peaceful purposes, and that the benefits of their use are balanced against their potentially harmful effects. The act covers administrative issues, but it also incorporates rules on civil law while addressing other areas, such as criminal law, labour law, environmental law, trade law, transport law and public health.

Part I of the Atomic Act lays down the general conditions governing activities related to the use of nuclear energy and ionising radiation, the rules related to radioactive waste management and third party liability for nuclear damage, state supervision and penalties. Parts II-IV are entirely devoted to necessary amendments of the related legislation, while Part V contains general transitional and final provisions. An annex lists the documentation required for particular licensed activities pursuant to Section 13 of the act.

The following activities involving the use of nuclear energy and radiation practices are covered by the Atomic Act [Part I, Chapter 1, Section 2(a) and (b)]:

- siting, design, construction, commissioning, operation, reconstruction and decommissioning of nuclear installations;
- design, manufacturing, repair and verification of nuclear installation systems or their components, including materials used for their production;
- design, production, repair and verification of packaging assemblies for transport, storage or disposal of nuclear materials;
- management of nuclear materials, selected items and, where used in nuclear activities, dual use items;
- research into and development of the activities mentioned above;
- professional training of personnel;
- transport of nuclear materials;
- any practice resulting in exposure to ionising radiation.

Numerous decrees and regulations have been adopted to implement the 1997 Act, as are described hereinafter within the appropriate section according to subject matter.

2. Mining Regime

Uranium mining in the Czech Republic started in 1946 and reached its peak in 1960 with an annual production of 3 000 tonnes. There is now only one uranium mine in operation. The operator of all uranium production facilities is the exclusively state-owned company *Diamo* (formerly *Ceskoslovensky Uranovy Prumysl – CSUP*).

In 1988, the former Czechoslovak Republic adopted Act No. 44/1988 on the Protection and Use of Mineral Wealth, which laid down general rules concerning the use of resources and the protection of mineral wealth. That same year, the Czech National Council adopted Act No. 61/1988 on Mining Operations, Explosives and the State Mining Administration, which more specifically dealt with the safety and procedures of mining operations. The licensing of mining activities is regulated by the Decree on Mining Licences [No. 15/1995].

The last uranium mine is due to close by the end of 2005 and DiAMO is currently implementing a programme for the restoration of former uranium mines under the supervision of the Ministry of Industry and Trade.

3. Radioactive Substances, Nuclear Items and Spent Fuel

The rules specifying procedures for the handling, use and safety of ionising radiation sources, nuclear items and spent fuel have now largely been incorporated into the Atomic Act and implementing decrees such as Decree No. 307/2002 on requirements for radiation protection, and Decree No. 317/2002 on type-approval.

a) *Ionising radiation sources*

According to Section 2(c) of the Atomic Act, an “ionising radiation source” means a substance, equipment or installation capable of emitting ionising radiation or releasing radioactive substances.

Ionising radiation sources are divided into five categories, the criteria for which are laid down by regulation [Decree No. 307/2002]. These are: 1) insignificant sources, the handling of which neither poses a risk of a radiation incident nor generates any radioactive waste; 2) minor sources, the handling of which does not create a risk of a radiation accident, although it may generate radioactive waste; 3) simple sources, the management of which creates a risk of a radiation accident, but no resulting acute health effects; 4) significant sources, the management of which might produce a radiation accident with acute health effects, but not a radiation emergency; and finally 5) very significant sources, which may cause a radiation emergency. A licence is required for all ionising radiation sources, except insignificant sources or type-approved minor sources used in accordance with the instructions approved by SÚJB. Finally, an “ionising radiation source workplace” is defined as an area where such sources are used or handled in a conscious and intentional manner, justifying special ionising radiation protection measures.

Decree No. 215/1997 sets out criteria for the siting of nuclear facilities and very significant ionising radiation sources.

b) *Nuclear items*

The 1997 Atomic Act [Section 2(j)] defines the term “nuclear items” as follows:

- nuclear materials, such as source materials, special fission materials and other materials so determined by regulation [Decree No. 145/1997];

- selected items which are materials, equipment and technology designed and manufactured to be used in the nuclear industry as set out by regulation [Decree No. 179/2002];
- dual-use items, *i.e.* materials, equipment and technology not designed and manufactured for use in the nuclear field, but which may be so used, as set out by regulation [Decree No. 179/2002].

Pursuant to the act, “source materials” are uranium containing a mixture of isotopes occurring in nature, uranium depleted in isotope ^{235}U , and thorium in whatever form they are found, as well as other substances or materials containing one or more of these items in a concentration or an amount exceeding the limits laid down by Decree No. 145/1997. “Special fission materials”, on the other hand, are ^{239}Pu , ^{233}U , uranium enriched in the isotope ^{235}U and/or ^{233}U and materials containing one or more of these radionuclides, except source materials, in concentration or amount exceeding the limits laid down by a regulation. With respect to the international transfer of nuclear items, the act prohibits such transfers where they would be in breach of the international commitments of the Czech Republic [Section 5].

c) Spent fuel

In the former Czechoslovakia, spent fuel from the Dukovany station was originally sent to Russia for disposal, until such time as Russia decided to accept it only for reprocessing, following which it was sent to an interim spent fuel storage facility at the Bohunice plant in the Slovak Republic. However, in 1993 the Slovak utility SEP, which operated the Bohunice plant, decided to no longer accept the fuel and in November 1995, the Slovak utility began shipping Dukovany’s spent fuel back to the Czech Republic, aiming to return all such spent fuel by 1997.

To address this problem, Dukovany began re-racking the fuel assemblies in its spent fuel ponds, which increased capacity by about 90%. In addition, the utility *Ceske Energeticke Zavody a.s.* (CEZ) built a 600 metric ton interim dry storage facility on site, which began trial operation in March 1997, and whose extension is already planned. A similar facility is planned for the Temelin plant. CEZ has also made a site characterisation (by geological and hydrological prospecting) of the locality for siting a central interim storage facility that could store fuel assemblies from the Dukovany and Temelin plants. In addition, the Czech Republic has launched a project, under the auspices of the Nuclear Research Institute, to study the disposal of waste in a deep geological repository. The chosen repository site is not due to become operational until 2065.

The management of spent or irradiated fuel will be subject to the same requirements as for radioactive waste, if the generator and SÚJB declare it to be radioactive waste [Section 24(3)] (See, *infra*, Section 7 “Radioactive Waste Management”).

4. Nuclear Installations

The definition of a “nuclear installation” under the Atomic Act [Section 2(h)] covers a variety of facilities: constructions or operational units which make up a nuclear reactor using a fission chain reaction; facilities for production, processing, storage and disposal of nuclear materials; repositories of radioactive waste, with the exception of repositories containing exclusively natural radionuclides; and facilities for the storage of radioactive waste, for which the radioactivity exceeds the limits laid down by regulation.

a) *Licensing and inspection, including nuclear safety*

i) *Licensing*

In accordance with the Atomic Act [Section 9(1)], a licence granted by SÚJB is required for:

- siting and construction of a nuclear installation or workplace with a very significant ionising radiation source;
- particular commissioning stages, operation and decommissioning of a nuclear installation or a workplace with a significant or very significant ionising radiation source;
- restart of a nuclear reactor following a fuel reload;
- reconstruction or other changes affecting nuclear safety, radiation protection, physical protection and emergency preparedness of a nuclear installation or workplace with a significant or a very significant ionising radiation source;
- discharge of radionuclides into the environment;
- handling of ionising radiation sources, as specified by Decree No. 307/2002;
- radioactive waste management;
- import or export of nuclear items and transit of nuclear material and selected items;
- handling of nuclear materials;
- transport of nuclear material and radionuclide sources, as specified by Decree No. 317/2002;
- training of classified personnel at a nuclear installation or ionising radiation source workplace;
- re-importation of radioactive waste resulting from the processing or re-processing of material exported from the Czech Republic.

Under the act, licence applications must be submitted to SÚJB with documents giving basic information about the licence applicant and the proposed activity for which a licence is sought. Further specific documents required by SÚJB for each licensed activity are set out in the Appendix to the act. The act also makes an environmental impact assessment a necessary condition for the issuance of a licence for siting or decommissioning [Section 13(4)]. The requirements for this assessment are set out in Act No. 244/1992 on Environmental Impact Assessment.

SÚJB's decision must be issued within a specified time period after the applicant has submitted its documentation. This period varies, depending upon the type of licence sought [Section 14]. SÚJB has the exclusive power to change, revoke or terminate a licence under conditions specified in the act. Termination of the licence will generally take place after its expiry or upon the licensee's bankruptcy or ceasing to exist. The revocation of a licence, on the other hand, can be imposed in the case of non-compliance with requirements under the act or can be sought by the licensee upon written

application, provided that nuclear safety and radiation protection concerns are satisfied [Section 16]. All licensees are registered by SÚJB in its national register.

After the issue of a licence therefor, the commissioning and operation of a nuclear installation remain subject to the provisions of the Atomic Act, and its implementing decrees. Some of the more relevant implementing decrees in this field are listed below:

- Decree No. 144/1997 on Physical Protection of Nuclear Materials and Nuclear Facilities and their Classification;
- Decree No. 214/1997 on Quality Assurance during Activities Connected with the Utilisation of Nuclear Energy and Practices Leading to Exposure, and establishing Criteria for Categorisation of Selected Equipment into Safety Classes;
- Decree No. 106/1998 on Nuclear Safety and Radiation Protection Assurance during Commissioning and Operation of Nuclear Facilities;
- Decree No. 195/1999 on Basic Safety Criteria for Nuclear Installations with Respect to Nuclear Safety, Radiation Protection and Emergency Preparedness.

ii) Inspection

Inspection activities are performed by nuclear safety and radiation protection inspectors appointed by the chairperson of SÚJB. An inspector must be competent to perform legal acts, have a relevant degree and three years of professional experience, be competent and of moral integrity and fulfil other requirements [Section 39(2)].

Inspectors verify whether licensees (and other registered owners of radiation sources) under the Atomic Act are adhering to the Act's provisions, its implementing regulations and the relevant licence conditions. Inspectors are authorised to:

- at any time, enter the licensee's premises and other workplaces where activities involving nuclear energy utilisation or resulting in radiation exposure take place;
- check compliance with requirements and conditions of nuclear safety, radiation protection, physical protection and emergency preparedness;
- carry out measurements and collect samples;
- perform a physical inspection of nuclear items or ionising radiation sources, including checks on accounting and control procedures;
- verify professional competence.

An inspector identifying discrepancies is authorised under Section 40 of the Atomic Act to:

- require the licensee to remedy the situation, within a determined time period;

- order the licensee to perform technical inspections, reviews or tests to verify nuclear safety status;
- revoke a licence attesting to the special competence of an employee of the licensee;
- recommend a penalty.

SÚJB is also authorised to impose provisional corrective measures at the licensee's cost [Section 40(2)].

iii) Nuclear Safety

Under the Atomic Act, nuclear safety falls entirely under the jurisdiction of SÚJB [Section 3(2)]. Responsibility for nuclear safety lies with the licence-holder [Section 17(1)]. "Nuclear safety" is defined as the condition and ability of a nuclear installation and its servicing personnel to prevent the uncontrolled development of a fission chain reaction or an inadmissible release of radioactive substances or ionising radiation into the environment, and to reduce the consequences of accidents [Section 2(d)]. Anyone engaged in activities associated with nuclear energy utilisation or radiation practices is required to ensure that nuclear safety and radiation protection are matters of priority [Section 4(3)].

The Czech Republic is a Party to the 1994 Convention on Nuclear Safety, which was approved on 18 September 1995.

b) Emergency response

The Czech Republic succeeded to both the 1986 Convention on Early Notification of a Nuclear Accident and the 1986 Convention on Assistance in the Case of Nuclear Accident or Radiological Emergency on 24 March 1993. The Atomic Act sets out the general rules for emergency response in accordance with these Conventions. A "radiation incident" is defined as an event resulting in an inadmissible release of radioactive substances or ionising radiation, or an inadmissible exposure of people. A "radiation accident" is defined as a radiation incident requiring measures to be taken to protect the public and the environment [Section 2(k) and (l)].

An "emergency plan" is defined as a set of planned measures to deal with a radiation incident or radiation accident and to limit their consequences. According to the act [Section 2(m)] there are three types of emergency plans:

- an on-site emergency plan, designed for nuclear installations or ionising radiation source workplaces;
- an emergency rule for the transport of nuclear materials or ionising radiation sources; and
- an off-site emergency plan for the region in the vicinity of a nuclear installation or ionising radiation source workplace where an emergency planning zone has been established.

The act lays down the licensees' obligations in the event of a radiation incident [Section 19]. The licensee must have an on-site emergency plan, approved by SÚJB and, in the event of an existing or potential radiation accident, the licensee must immediately notify the relevant local authority, SÚJB and other relevant bodies, and ensure that a warning is issued to the public within the emergency planning zone. In addition, the licensee must stop or limit the consequences of a radiation accident while taking protective measures for employees. In the event of a radiation accident, the licensee must, in addition, participate in the operation of the National Radiation Monitoring Network [Governmental Regulation No. 11/1999] (see *infra*, Section 6 "Radiation Protection"). For radiation incidents or accidents during transport, similar obligations apply. Emergency rules should be included in the documentation for a licence to transport nuclear materials and radionuclide sources.

The licensee must also submit information to the relevant regional authority to help it prepare an off-site emergency plan and co-operate to ensure emergency preparedness in the emergency planning zone. In addition, the licensee is also obliged to contribute financially to the National Radiation Monitoring Network. Finally, it must participate in running a press and information campaign to ensure that the public is prepared for radiation emergencies.

In the event of a radiation accident, SÚJB is obliged to ensure mobilisation of its Emergency Crises Staff (ECS) and the changeover of the RMN into emergency mode. Based on its assessment of the radiation situation [Section 3(2)(p)] and current information from the operator [Section 19(1)(a) and (e)], the ECS prepares the background information necessary to take decisions aimed at reducing or averting radiation exposure. Expert and technical support is provided to the ECS by the Emergency Response Centre.

Decree No. 318/2002 sets out details on the emergency preparedness of nuclear facilities and workplaces with ionising radiation sources and on requirements on the content of on-site emergency plans and rules. This decree, which specifies the scope and requirements of compulsory documentation relating to emergency preparedness (e.g. on-site emergency plans, emergency rules) entered into force on 18 July 2002. It transposes certain provisions of Council Directive 89/618/Euratom of 27 November 1989 on informing the general public about health protection measures to be applied and steps to be taken in the event of a radiological emergency, and specifies conditions for the application of Council Decision 87/600/Euratom of 14 December 1987 on Community arrangements for the early exchange of information in the event of a radiological emergency.

c) *Decommissioning*

"Decommissioning" means activities aimed at releasing nuclear installations or ionising radiation source workplaces, following the termination of their operation, for their utilisation for other purposes or to exempt them from the effect of the Atomic Act [Section 2(n)]. The decommissioning of a nuclear installation or a Type III or IV Workplace requires a licence from SÚJB, which in turn requires an environmental impact assessment, a quality assurance programme, an on-site emergency plan and methods of ensuring physical protection [Section 13]. Decree No. 185/2003 sets out further details on the decommissioning of nuclear installations or Type III or IV Workplaces.

Finally, the operator of a nuclear installation or ionising radiation source workplace is required to keep a financial reserve for the decommissioning of his facility. Control over these reserves is exercised by the Radioactive Waste Repository Authority (see, *infra*, Section 7 "Radioactive Waste Management" and Part II). Further details in this respect are set out in Decree No.

360/2002 establishing reserves for the decommissioning of nuclear installations or Type III or IV workplaces.

5. Trade in Nuclear Materials and Equipment

Nuclear trade is now regulated by the Atomic Act and Decrees No. 145/1997 and No. 179/2002.

A licence is required from SÚJB for the import or export of nuclear items or transit of nuclear materials and selected items [Section 9 of the Atomic Act], as is a licence from the Ministry of Industry and Trade under Act No. 21/1997 on Control of Export and Import of Goods and Technologies Subject to International Inspection Modes. In principle, the Atomic Act prohibits the international transfer of nuclear items into states that would contravene its international commitments under the Non-Proliferation Treaty and the Treaty on the Prohibition of the Emplacement of Nuclear Weapons and Other Weapons of Mass Destruction on the Seabed and the Ocean floor and in the Subsoil thereof. Import of radioactive waste into the Czech Republic is prohibited. However, the act does allow the re-import of ionising radiation sources and radioactive waste from materials exported from the Czech Republic for processing or reprocessing, if approved by SÚJB.

Decree No. 179/2002 establishes a list of selected items and dual use items in the nuclear sector, taking into account the applicable international legislation (especially IAEA Recommendations in this field and Council Regulation (EC) No. 1334/2000 of 22 June 2000 setting up a Community regime for the control of exports of dual-use items and technology). It entered into force on 1 June 2002.

6. Radiation Protection

The Atomic Act defines “radiation protection” as a system of technological and organisational measures to reduce exposure of persons and the environment [Section 2(e)]. State supervision over radiation protection is entrusted to SÚJB pursuant to the Atomic Act [Section 3]. Dose limits, constraints and guidance levels are set out in Decree No. 307/2002.

Dose limits must take into account exposures from other practices. Medical exposures, natural exposures and exposures received during a radiation accident are regulated by guidance levels corresponding to reasonably achievable levels of radiation protection. In general, the extent to which natural radiation exposures must be reduced is dependent upon the detriment caused, balanced against the benefits to be gained.

Radiation protection must also be respected during transportation of nuclear materials and in radioactive waste management activities. Compliance with applicable limits will be verified by SÚJB’s inspectors and violations can result in the imposition of penalties.

The act, together with the implementing legislation in the field of radiation protection, is based on the 1990 Recommendations of the International Commission for Radiological Protection (ICRP) and the International Basic Safety Standards for Protection against Ionising Radiation and for the Safety of Radiation Sources, and corresponds to Council Directive 96/29/Euratom. The general principles of radiation protection, such as justification of radiation practices and the optimisation of radiation protection and dose limitation are covered. Dose limits for the public are decreased from 5 mSv to 1 mSv per year or, as an exception, 5 mSv per five consecutive years starting from the

year 1998, and for radiation workers from 50 mSv per year to 100 mSv per five consecutive years starting from the year 2000.

Several new decrees were adopted in 2002 in order to bring domestic radiation protection legislation in line with EU requirements and to further implement the provisions of the Atomic Act:

- Decree No. 307/2002 on Radiation Protection, which entered into force on 12 July 2002, lays down basic safety standards for protection of the health of workers and the general public against the dangers arising from ionising radiation. It aims to implement Council Directives 96/29/Euratom of 13 May 1996 and 97/43/Euratom of 30 June 1997;
- Decree No. 315/2002 on the Professional Qualifications and Training of Personnel in Relation to Nuclear Safety and Radiation Protection, which entered into force on 16 July 2002, amends a previous decree on the same subject [No. 146/1997] in relation to requirements on qualifications and professional training of personnel in the nuclear field, on methods to be used for the verification of their special professional qualifications and on the issue of authorisations to selected members of personnel. This decree also aims to implement Council Directives 96/29/Euratom and 97/43/Euratom;
- Decree No. 319/2002 on Performance and Management of the National Radiation Monitoring Network, which entered into force on 18 July 2002, establishes the details of the functioning and the organisation of the National Radiation Monitoring Network established under the supervision of the SÚJB. It implements certain provisions of Council Directive 89/618/Euratom on Informing the General Public about Health Protection Measures to be Applied and Steps to be Taken in the Event of a Radiological Emergency and also provides for the application of Council Decision 87/600/Euratom on Community Arrangements for the Early Exchange of Information in the Event of a Radiological Emergency and relevant provisions of the Euratom Treaty;
- Decree No. 419/2002 on Personal Radiation Passports established details on the issue, registration, verification and use of personal radiation passports. This radiological monitoring document is to be used until a uniform Community system is established governing the operational protection of outside workers performing activities in controlled areas. The decree aims to implement Council Directive 90/641/Euratom on the Operational Protection of Outside Workers Exposed to the Risk of Ionising Radiation during their Activities in Controlled Areas.

The Radiation Monitoring Network (RMN) of the Czech Republic is co-ordinated by SÚJB. Under normal circumstances, it monitors radiation levels for the early detection of accidents; under emergency conditions, it evaluates the consequences of a radiation accident. Normal monitoring involves the following:

- an early warning network, which comprises 60 measuring points;
- a territorial network of 206 measuring points equipped with thermoluminescent dosimeters (TLD);
- local TLD networks with 90 measuring points in the surroundings of the Dukovany and Temelin nuclear power plants;

- a territorial network of 11 air contamination measuring points;
- a network of 9 laboratories with gamma spectrometric and radiochemical analytical instrumentation.

The monitoring results are published in the Annual Reports on the Radiation Conditions in the Czech Republic.

7. Radioactive Waste Management

The handling, disposal and management of radioactive waste are governed by the Atomic Act and corresponding regulations such as Decree No. 307/2002 on Radiation Protection. According to the act, “radioactive waste” means substances, objects or equipment containing or contaminated by radionuclides for which no further use is foreseen. Such waste will have to be disposed of in radioactive waste repositories, *i.e.* an area, structure or facility at the surface or underground, for the purpose of radioactive waste disposal. “Radioactive waste and spent fuel storage” refers to the temporary emplacement of radioactive waste or spent or irradiated nuclear fuel into areas, facilities or installations designed for this purpose, whereas “disposal” refers to the permanent emplacement of radioactive waste into areas, facilities or installations without the intention of its retrieval. [Section 2(r), (s), (t) and (u)]. Both storage and disposal of radioactive waste and spent fuel require a licence issued by SÚJB [Section 9(1)(j)].

The Atomic Act further provides that the owner or generator of radioactive waste is financially responsible for its management, from its time of origin to its disposal, including monitoring after closure of the radioactive waste repository, and any necessary research and development activities [Section 24]. A “generator” is an owner of radioactive waste or any other person or entity managing an owner’s assets in such a manner that radioactive waste is generated. The state, on the other hand, is responsible for guaranteeing the safe disposal of all radioactive waste, including monitoring and supervision of repositories after their closure, and for this purpose the act required the Minister of Industry and Trade to establish the Radioactive Waste Repository Authority as a state organisation.

The Authority, established on 1 June 1997, is funded through levies imposed on generators of radioactive waste, and is responsible for accepting all radioactive waste, including spent or irradiated fuel, and providing for its safe disposal, including monitoring and supervising repositories after their closure (see *infra* Part II). The Authority’s activities are, in part, determined by the term of its agreement with the waste generator. Waste will be accepted only if it meets the acceptance criteria for disposal, as determined by SÚJB. Upon acceptance of the waste, it becomes state property under the exclusive supervision of the Authority [Section 31].

Governmental Order No. 416/2002, adopted on 28 August 2002, established details concerning the amounts and method of payment of contributions to the Nuclear Account by generators of radioactive waste and provides for the annual administration of these resources. The Nuclear Account is a special fund provided by the state to finance all activities regarding radioactive waste disposal including those of the Radioactive Waste Repository Authority. The order further provides for an annual contribution to be made to municipalities having a radioactive waste repository on their cadastral area.

At the international level, the Czech Republic approved the 1997 Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management on 25 March 1999.

8. Non-Proliferation and Physical Protection

The Atomic Act defines “physical protection” as a system of technological and organisational measures preventing unauthorised activities with nuclear installations, nuclear materials and selected items [Section 2(j)]. It provides that SÚJB is responsible for physical protection and non-proliferation issues, and authorises it to maintain a national system of accounting for and control of nuclear materials. SÚJB approves the inclusion of a nuclear installation or its components and nuclear materials into a category for physical protection and approves methods of physical protection [Section 3(2)(r)]. It also makes decisions concerning the management of nuclear items, if the owner or other person responsible fails to comply with requirements under the act [Section 3(2)(u)]. In addition, the act makes the police responsible for ensuring emergency services to protect nuclear installations and for participating in the physical protection of nuclear material during its transportation [Section 44]. The licensee is responsible for ensuring physical protection of nuclear material [Section 17].

In respect of non-proliferation, the Czech Republic succeeded to the 1968 Treaty on the Non-Proliferation of Nuclear Weapons on 1 January 1993 and succeeded to the 1979 Convention on the Physical Protection of Nuclear Material on 24 March 1993. The provisions of these Conventions are implemented by the Atomic Act and by Decree No. 145/1997 on Accounting for and Control of Nuclear Materials and their Further Delimitation (as amended by Decree No. 316/2002), Decree No. 144/1997 on Physical Protection of Nuclear Materials and Nuclear Facilities and their Classification, and Section 186 of Act No. 412/2002 – the Criminal Code – provision on Illegal Production and Handling of Radioactive Materials. The Czech Republic also ratified the 1996 Comprehensive Nuclear Test Ban Treaty on 11 September 1997.

Inspectors from the International Atomic Energy Agency, together with those from SÚJB, are authorised to inspect nuclear material and the accounting and control system, according to the Non-Proliferation Treaty and the Treaty on the Prohibition of the Emplacement of Nuclear Weapons and Other Weapons of Mass Destruction on the Seabed and the Ocean Floor and in the Subsoil thereof [Section 39(5)].

9. Transport

The Atomic Act also addresses the transport of nuclear materials and radionuclide sources [Section 20]. Such transport is subject to a licence to be issued by SÚJB in accordance with Decree No. 317/2002. The licence does not have to be obtained by the carrier unless that person is also the shipper, consignor or consignee [Section 9(m)], but the licensee must ensure that the consignee is authorised to handle nuclear materials or ionising radiation sources according to the rules set out in the act, and that the packaging assemblies are “type-approved” by SÚJB [Section 20(1)(a) and (c)].

The licensee must also comply with specific legislation on transport, including Act No. 111/1994 on Road Transport and its associated Decree No. 187/1994, Act No. 266/1994 on Railways, Appendix 1 to Decree of the Minister of Foreign Affairs No. 8/1985 on the Convention on International Rail Transport (COTIF), Act No. 114/1995 on Inland Navigation, Decree No. 17/1966 on Air Transport Rules in the wording of Decree No. 15/1971 and Decree No. 307/2002 and Decree No. 144/1997 on physical protection. The licensee must also report to a border customs office, the transfer, entry into or exit from the Czech Republic of nuclear items or radionuclide sources, other than dual-use items. Breach of this condition could result in the withholding of the goods to be transported.

Decree No. 317/2002 on Type Approval of Packaging Assemblies for Transport, Storage and Disposal of Nuclear Materials and Radioactive Substances, on Type Approval of Ionising Radiation Sources and on Transport of Nuclear Materials and Specified Radioactive Substances entered into force on 18 July 2002. It establishes a list of nuclear materials and radioactive substances which must be transported, stored or disposed in type-approved packaging assemblies only, sets out prerequisites for such type approvals and lays down details on the transport of nuclear materials and specified radioactive substances. It aims to implement certain provisions of Council Directive 92/3/Euratom of 3 February 1992 on the Supervision and Control of Shipments of Radioactive Waste between Member States and Into and Out of the Community, and further provides for application of Regulation (Euratom) No. 1493/93 of 8 June 1993 on Shipments of Radioactive Substances between Member States.

10. Nuclear Third Party Liability

The Czech Republic succeeded to the 1963 Vienna Convention on Civil Liability for Nuclear Damage and the 1988 Joint Protocol Relating to the Application of the Vienna Convention and the Paris Convention, on 24 March 1994. As a result, the Atomic Act incorporates the basic principles of nuclear third party liability found in the Vienna Convention, including the exclusive liability of the operator for any third party nuclear damage resulting from an accident at his nuclear power plant and compulsory insurance coverage for any such damage. Furthermore, the state will provide compensation for any such damage exceeding the amount of the operator's financial security limit.

The act defines an "operator of a nuclear installation", by reference to the Vienna Convention, as the holder of a licence to operate a nuclear installation, to perform any other activity in relation thereto or to transport nuclear material [Section 33(1)]. The act specifies that the extent and manner of compensation for nuclear damage is to be regulated by Civil Act No. 40/1964 [Section 34(1)]. Nuclear damage is defined to include the cost of preventive measures and measures of reinstatement of the impaired environment [Section 34(2)]. The operator's liability is limited to Czech Republic koruna CZK 6 billion (approximately 150 million Special Drawing Rights (SDR)) per nuclear installation, whereas for facilities with reduced risk and transport the liability limit is CZK 1.5 billion (approximately SDR 37.5 million) [Section 35]. The time limit for bringing claims for compensation is ten years from the occurrence of the nuclear incident with a "discovery period" of three years [Section 38].

To cover this liability, the operator is obliged to have insurance or other financial security of not less than CZK 1.5 billion for nuclear power plants and their stipulated associated activities, or CZK 200 million for lesser risk facilities and transport [Section 36(3)]. This security must be obtained from an authorised insurer and the policy conditions must be approved by a state insurance supervision authority. To cover these liability claims, a nuclear insurance pool was established in the Czech Republic in July 1995.

The Atomic Act further provides for state guarantees to ensure compensation up to the established liability limits if liability claims exceed the mandatory insurance of the operator [Section 37].

The provisions contained in general regulations on liability for ordinary damage apply only if international agreements to which the Czech Republic is a Party or the Atomic Act do not provide otherwise [Section 32(2)].

II. INSTITUTIONAL FRAMEWORK

1. Regulatory and Supervisory Authorities

a) *State Office for Nuclear Safety (SÚJB)*

In 1993, pursuant to its Constitutional Act No. 4/1993, and to Act No. 21/1992, the Czech Republic transferred supervisory functions and responsibilities in the nuclear safety area from the former Czechoslovak Atomic Energy Commission to the State Office for Nuclear Safety (*Státní úřad pro jadernou bezpečnost – SÚJB*). Its competence as the regulatory authority responsible for supervising the use of nuclear energy and ionising radiation sources is set out in the Atomic Act of 1997 [Section 3(2)]. In general, SÚJB supervises nuclear safety, physical protection, radiation protection and emergency preparedness on the premises of a nuclear installation or in ionising radiation source workplaces, as well as the management of radioactive waste. The chairperson of SÚJB is nominated by the government of the Czech Republic.

SÚJB is empowered to issue licences for activities regulated by the act and to maintain a register of such licences. In addition, it approves types of packaging assemblies for transport and storage of nuclear materials and radionuclide sources. SÚJB maintains the state system of accounting for and control of nuclear materials and determines the requirements for their registration and inspection. It maintains a registration system of radiation exposure of the general public and of persons who have working contact with ionising radiation sources. It also establishes commissions to verify the special qualifications of selected personnel.

Furthermore, SÚJB provides data to municipalities and District Councils on radioactive waste handling within their area of administration, co-ordinates the operation of the National Radiation Monitoring Network, ensures the operation of the Emergency Response Centre (ERC), provides international data on radiation levels and ensures international co-operation with the IAEA.

SÚJB has three sections: nuclear safety, radiation protection and management and technical support, each with its own Deputy Chairperson.

The Nuclear Safety Section comprises three departments: Assessment of Nuclear Installations, Control of Nuclear Installations and Nuclear Materials.

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

The Management and Technical Support Section consists of the Departments of International Co-operation, Financial Management and Administration (Budget & Finance) and the Office Bureau, which includes a legal division.

Within SÚJB, the Emergency Response Centre and the EU Unit report directly to the Chairperson. Finally, SÚJB supervises the functioning of the National Radiation Protection Institute and the National Institute for Nuclear, Chemical and Biological Protection.

b) Ministry of Industry and Trade

The Ministry of Industry and Trade is responsible for:

- developing domestic legislation and preparing intergovernmental treaties in the nuclear field;
- proposing strategic reserves of nuclear materials;
- co-operating with other government agencies in developing emergency preparedness plans and environmental protection principles;
- co-ordinating activities in the nuclear field in relation to the government's economic policy;
- developing governmental policy in the nuclear area including the management of radioactive waste and spent nuclear fuel;
- monitoring the operation of the Dukovany and Temelin NPPs.

The construction, operation and decommissioning of nuclear installations as well as waste management are the responsibility of the Ministry of Industry and Trade.

c) Ministry of the Interior

The Ministry of the Interior is responsible for establishing details of Crisis Regional Plans, Regional Emergency Plans and off-site emergency plans. The police are also responsible for providing emergency protection of nuclear installations and for participating in the physical protection of nuclear materials during their shipment.

d) Ministry of the Environment

The Ministry of the Environment is responsible for regulating nuclear activities to ensure that they comply with environmental laws. It also ensures that the procedures for environmental impact assessment are applied as a prerequisite to obtaining a licence, based on Act No. 244/1992 on Environmental Impact Assessment.

2. Public and Semi-Public Agencies

a) CEZ, a.s.

i) Legal Status

Before the dissolution of Czechoslovakia, the utility *Ceske Energeticke Zavody, a.s.* (CEZ) was state-owned. As part of its move to a market economy, the Czech Republic aimed to privatise the CEZ, and now 32% of its stock is publicly owned, while almost all of the remaining 68% is held by

the Czech government. This will be reduced to 51% when privatisation has been completed. CEZ reports directly to the Czech Ministry of Industry and Trade.

ii) Responsibilities

CEZ is predominately responsible for electricity generation and very high-voltage transmission on 220-400 kV level in the Czech Republic. It is also responsible for implementing regulatory decisions and for the operational performance of nuclear undertakings. It sells electricity to regional distribution companies.

b) National Radiation Protection Institute (NRPI)

i) Legal Status

NRPI is a state organisation founded on 1 June 1995 by SÚJB, as its expert advisor in the field of radiation protection. The budget of the Institute is fully covered by the state through SÚJB. The chairperson of SÚJB appoints the director of NRPI.

ii) Responsibilities

The major task of NRPI is to perform all scientific activities necessary to support SÚJB as the main regulatory body in the field of radiation protection. NRPI participates in the monitoring of the radiological situation within the national territory and supports SÚJB in the co-ordination of the nation-wide Radiation Monitoring Network.

c) Radioactive Waste Repository Authority (RAWRA)

i) Legal Status

The Radioactive Waste Repository Authority – RAWRA (*Sprava ulozist radioaktivnich odpadu*) was established by the Ministry of Industry and Trade on 1 June 1997. It is a state organisation responsible for ensuring the safe disposal for radioactive waste and the monitoring and supervision of repositories after their closure.

ii) Responsibilities

The Authority is responsible for the following waste management activities:

- preparation, construction, commissioning, operation and closure of radioactive waste repositories and the monitoring of their impact on the environment;
- conditioning of spent or irradiated nuclear fuel into a form suitable for its disposal or further utilisation;
- record keeping of accepted radioactive waste and its generators;

- administration of levies for the Nuclear Fund;
- promotion and co-ordination of research and development in the field of radioactive waste management.

iii) Structure

The Authority has a management board and a director who are appointed by the Minister for Industry and Trade. The director, who is the statutory representative of the Authority, may act on its behalf and may participate in board meetings.

The board consists of 11 members, three of whom are representatives of the state administration bodies, four of whom represent the waste generators and a further four represent the public. The board supervises the efficiency with which resources are spent on the Authority's activities and recommends activity plans and budgets to the Minister.

iv) Financing

The Authority is funded through levies imposed on the producers of radioactive waste. The levies are put into a "nuclear account" managed by the Ministry of Finance and are used to finance the various operations by the Authority.

d) Diamo

Diamo (formerly *Ceskoslovensky Uranovy Prumysl – CSUP*) is an exclusively state-owned company acting as operator of all uranium production facilities. It is responsible for the extraction and processing of uranium ore and for the implementation of the state programmes on reducing the uranium industry and rehabilitation of former uranium production sites. As the last uranium mine is due to close by the end of 2005, Diamo is currently implementing a programme for the restoration of former uranium mines under the supervision of the Ministry of Industry and Trade.

e) Nuclear Physics Institute (NPI)

The Nuclear Physics Institute was founded in 1955 and has undergone various changes since, including having served as the Nuclear Research Institute of the former Czechoslovak Commission for Atomic Energy. In 1993, after the dissolution of Czechoslovakia, the Nuclear Physics Institute became part of the Czech Academy of Sciences and now includes the Institute of Radiation Dosimetry and the Neutron Activation Analysis Laboratory. The NPI is comprised of the Departments of Theoretical Nuclear Physics, Nuclear Spectroscopy, Neutron Physics, Nuclear Reactions and Radiation Dosimetry.

f) Nuclear Research Institute Rez, a.s. (NRI)

The NRI is the successor to the Nuclear Research Institute which was founded in 1955. In 1971, it came under the authority of the Czechoslovak Atomic Energy Commission and in 1992 it was transformed into a joint-stock company with the Czech Government holding 50% of its shares, CEZ holding 26%, the Skoda Holding Company 9.8% and Skoda Nuclear Engineering 2.7%.

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The NRI's objective is to carry out research and development in nuclear technologies and to implement the results achieved. Employing 600 staff members, NRI operates the divisions/departments of Nuclear Power and Safety, Integrity and Materials, Fuel Cycle Chemistry, Reactor Services, Radiopharmaceuticals. It provides support services to SÚJB.