CZECH REPUBLIC

COUNTRY PROGRAMME FRAMEWORK FOR TECHNICAL CO-OPERATION

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CZECH REPUBLIC

Country Programme Framework

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I. INTRODUCTION

The main objective of the Country Programme Framework (CPF) document for the Czech Republic is to identify and agree on areas for technical co-operation (TC) with the IAEA that are of high priority for the country. It is intended to respond to major needs of the country, to have a well-defined impact, be end-user oriented, sustainable, enjoy strong government support and commitment and are of a type where the Agency can make an important contribution, thus meeting the central criteria for TC projects.

This CPF Document is based on findings of a CPF mission that visited the Czech Republic from 12 to 13 November 2001, followed by several Country Officer visits in 2002 and 2003, and was finalized by the State Office for Nuclear Safety (SÚJB), as the main counterpart of the Agency for all TC matters, in consultation with other relevant governmental bodies.
(See **Attachment 1 – The CPF Document**).

II. COUNTRY PROFILE

A. Historical Overview

The history of the 20th century begins with the foundation of an independent state of Czechs and Slovaks - Czechoslovakia (28 October 1918). On January 1st, 1993, the Czech and Slovak Federative Republic was peacefully divided and the independent Czech and Slovak Republics were founded. The Czech Republic is a member of the OECD (since 1995), NATO (since 1999) and in the final stage to join the European Union in May 2004.

B. Geography

The Czech Republic is a relatively small country of 78 864 square kilometers located in the divide between the two principal mountain systems in the centre of Europe which run through Czech territory and has a mild climate. The country's topography is quite varied from plains, hills to highlands and mountains, and regions in the range from 200 to 500 m above sea level make up about 74% of the country. It borders with Austria, Germany, Poland and Slovakia.

According to a 2001 census, the Czech Republic has a population of 10,224,192 inhabitants. Three quarters of the population live in urban areas. The population density is 130 inhabitants per sq. km, while the natural change in population in the Czech Republic was -1.7 persons (in 2001) per 1,000 inhabitants.

C. Administration and social conditions

The Czech Republic became an independent sovereign state on January 1st 1993. It has an elected Parliament, which adopts laws and a governmental system to implement legislation.
The **President** is the head of state, elected by the Parliament for a five-year term and a maximum of two terms. The National legislature consists of the lower house - the Chamber of Deputies with 200 members and the upper house - the Senate with 81 members. The executive power is vested in the Council of Ministers, headed by Prime Minister, who is appointed by the President.
Within the Government there are 14 Ministries and 10 State Offices, one of them is the State Office for Nuclear Safety – Státní Úřad pro Jadernou Bezpečnost (SÚJB).

The Czech Republic's major **foreign policy** goal is to obtain full membership into the European Union. The main goals, proposed measures and development are introduced in "Policy Statement of the Government of the Czech Republic" and in "National Programme for the Preparation of the Czech Republic for Membership in the European Union".

In the **health** sector several national programmes have been launched to improve the situation at the state and local level and the Ministry of Health Care is the responsible ministry for implementing the "National Environmental Health Action Plan". The sector is user of radiation sources for diagnosis and treatment.

The Ministry of Education, Youth and Sports is the central authority in **education** responsible for overall strategy, educational policy, upper secondary and special schools, distribution of the financial resources from the State budget and introduction of the general scientific research and development policy.

"The National Programme of Development of Education" (Gov. resolution No. 113 of 2001-02-07), published under the title "The White Book", is a part of the strategy of further social and economic development of the Czech Republic, which highlights the education and human resource development as one of the governmental priorities. The White Book provides basic guidelines for the development of the whole education system in the mid-term of 2005, with some parts up to the year 2010. The education sector is user of radiation sources including the school research reactor at the Technical University in Prague.

D. Economy

After the transformation of the economy into market oriented, the private sector has begun to prevail in the economy and its influence on general economic development is steadily increasing. A capital market has been established and the foreign currency exchange rate has been stabilized. The inflation rate (2.1% in 1999, 3.9% in 2000, 4.7% in 2001 and 1.8% in 2002) is expected to stay at or below 4.5 % in the near future, according to government and OECD estimates.

The export market has been shifting to the markets of OECD countries and export is increasing but is lower than import. In both exports and imports Czech foreign trade has been concentrating on products with a higher degree of processing. In 2002 the unemployment rate remained around 10 %.

The Czech Republic belonged historically among the countries in Europe with highly developed and traditionally strong industry sector. **Industry**'s key question for further development is the programme to restructure and revitalize the most important industrial enterprises involving the privatization of the state shares in such companies. The Government internal and foreign policy is strengthening the prestige of Czech industry and trade. A long-term energy conception has been drafted including reduction of energy demands, commercial and households, respecting the strategic interests of the state and of the final consumers. Energy policy is closely linked to the raw material policy with the focus on reduction of raw material demands.

Agriculture has traditionally represented a very important role in the economy, however the total gross agricultural production has been slowly decreasing recently. The National

Programme on Agriculture and the strategy of its implementation focus on recovery, stabilization and institutional preparations for the EU accession to adjust the sector as quickly as possible to the conditions of EU's common agricultural policy and make the sector competitive in all the areas.

Natural resources are very limited. The surface mines of brown coal are located in the area of north-west part of Czech Republic. The main primary energy source, brown coal (now being phased out), has high contents of sulphur. Uranium, lead, copper, zinc, mercury, tin, and iron ores have almost been fully mined. Crude oil, natural gas and raw materials have to be imported. Only very limited hydro resources and almost no gas and oil are locally available. Coal is still the main energy source in final energy consumption.

Power generation. The Czech Republic's energy sector consists of nuclear-, thermal- and hydro- power plants (see **Attachment 2**, Table 1 *The electricity production and installed capacity since 1991).* Electricity production is based on energy sources that are quite stable for several years. In 2002 fossil fuel plants (mostly using coal) provided 71.8% of total electricity, nuclear power plants 24.5% and hydro plants 3.6%. With the Temelin NPP in full operation, nuclear power will provide about 40-45% of electricity production in the Czech Republic. Thus the nuclear power plays an important role in electricity production and reduction of emissions in compliance with the Kjóto protocol requirements.

The coal-fired power plants, that are planned to remain in use for a long-term, have been de-sulphured and denitrified before the end of 1998 and their operation currently meets the strict emission limits of. Clean Air Act (No. 86/2002 Coll.).

The government **energy policy** is focusing on harmonizing the Czech energy sector standards with those in the EU. Coal will gradually be replaced or increasingly used for co-generation. The following changes are included in the new energy policy:

- Free market energy prices;
- Restructuring and privatization of state-owned energy enterprises;
- Secure, more efficient, and less polluting forms of energy;
- Promotion of energy conservation;
- Enlargement and diversification connections to international oil and gas pipelines and electricity networks;
- Improvement of efficiency of domestic oil and gas production;
- Restructuring of the public energy sector to implement long-term policies and provide oversight and co-ordination.

From 2002 the largest customers of energy, accounting for roughly two-thirds of total consumption, have a free choice of the electricity supplier and by the end of year 2006, the schedule will eventually cover all energy customers. The timetable for natural gas with the largest customers getting access first will follow the similar pattern. In 2005, 28% of the natural gas transmission system capacity will be opened to the third party access and in 2008, the access will be extended to include 33% of natural gas transmission. It is expected that Transgas,

the Czech gas pipeline utility, will cross out its subsidies in 2003.

The new requirement for energy audits to be performed by the end of 2003 has been introduced, and that are mandatory for all government facilities (local and national) with energy usage of more than 1,500 GJ/y (i.e., down to the size of most schools and large buildings) and for non-government energy users (single payers) that are higher - at least 35,000 GJ/y (i.e., middle-size industries and larger). The energy conservation and outside investments are expected by energy services companies to ensure economically feasible improvements in energy usage. Both primary and final energy consumption has decreased in 2000 in comparison to 1990 and this indicates the increasing efficiency of the economy.

The energy policy includes the renewable energy sources (solar, wind, biomass etc.), however, with limited possibilities: small hydro power stations for local use, wind power stations where wind exceeds 5 m per second on average, limited scale of solar systems, some geothermal using heat pumps. The renewable sources shall contribute to the total consumption of primary energy sources from a current level of about 1.5 % to about 3-6 % by 2010 and about 4-8 % as of 2020.

As of 1 January 2001 a new energy regulatory authority has been established in the Czech Republic. Its responsibilities include control of prices for energy and liberalisation of the electrical energy market.

III. OVERVIEW OF PAST TC ACTIVITIES

The independent Czech Republic became a new Member State of the Agency in 1993 but former Czechoslovakia is one of the founders of the IAEA in 1957. The country's institutions had for a number of years participated in different Agency activities, including TC, as part of the former Czechoslovakia and had benefited greatly from the Agency's technical co-operation programme. During the period 1993-2002, around US$ 5.3 million was provided to Czech Republic through the Agency's TC programme for 23 national TC projects implemented, as well as its active participation in regional and interregional TC projects (see **Attachment 4**, Table 1 *Disbursement Including In-kind Contributions by Main Fields of Activity for the Czech Republic 1993-2002*). Since 2001, the Czech Republic began contributing to the TC programme as a donor as well.

A. Assistance received

Nuclear power-related activities, especially nuclear safety, have been a principal major focus for the Agency's national technical co-operation programme with the Czech Republic. It has focused on many specific technical issues of WWER-type reactors, such as integrity of primary circuit, in-service inspection, plant operation and maintenance, Systematic Approach to Training (SAT), comprehensive safety assessment methodology and analysis and implementation of operational feed-back. A safety improvement programme for Dukovany NPP implemented over the years resulted in upgradings of the plant in accordance with international practice and standards. Safety assessment of the Temelin NPP was subject to technical co-operation through site safety mission, design review missions (1990, 1996, 2001), operational

safety missions – OSART (1990, 2001) and various topical missions (QA, LBB, PSA, fire safety), which were focused on safety issues generally identified for WWER 1000 units. Many missions at the Dukovany NPP (8) and particularly at Temelin NPP (18) have taken place since 1990 (see **Attachment 4**, Tables 2 and 3 *The IAEA Missions at the Dukovany NPP and at the Temelin NPP*). Furthermore, the full scope IRRT mission was also conducted at SÚJB in June 2001 to review the effectiveness of the regulatory body of the Czech Republic. Participating in regional projects related to safety assessment was one of the most important areas and continued under several national projects. The Nuclear Research Institute Řež was one of the main beneficiaries.

In 2002, an agreement between the Czech Republic and the IAEA was reached on the **Integrated Safety Evaluation (ISE)** of the nuclear power sector in the country, using the IAEA safety standards, to demonstrate the progress achieved during the last decade in safety improvements. A two-tract approach was applied:

- The evaluation of national regulatory regime i.e. statute, responsibilities and effectiveness of implementation of regulatory function by the SÚJB, the Czech regulatory body, and
- The design and operational safety of Dukovany and Temelín NPPs against the IAEA recommendations and the international practice.

The report on ISE states that the progress achieved in the regulatory area and current regulatory regime in the Czech republic is complete, stable and effective in all aspects, the regulatory body SÚJB is fully independent (de jure and de facto), has all the necessary human and financial resources for effective execution of its functions.

The Dukovany and Temelin NPPs both have implemented extensive safety enhancement programmes as identified by the IAEA and focused on the WWER reactors safety issues. At the Dukovany NPP, all the safety issues have been addressed and further work will continue under the MORAVA modernization programme including upgrading the I&C system to digital one.

The Temelin NPP safety enhancement started, with the IAEA assistance, during the construction period, when replacement of I&C system and nuclear fuel was initiated. The combination of eastern and western technology was successfully completed and verified by the commissioning process. The IAEA missions have so far confirmed that most of the safety issues have been resolved and works on the few remaining issues are in an advanced stage and are not precluding safe operation of the Temelin NPP.

In summary, the report concludes that the Czech Republic regulatory regime and safety of its NPPs are consistent with the IAEA safety requirements . It emphasizes that there is a need for continuously maintaining safety and monitoring its performance, following worldwide experience and new safety developments. The Czech Republic has already in place sound mechanism. The above ISE report for the Czech Republic is the first report of this type prepared by the IAEA and a Member State.

In the past decade the radioactive waste management policy was subject to several TC projects focusing on assessment of risks and elaboration of a waste management policy in the Czech Republic.

Other areas of technical co-operation were QA programmes in radiology and radiotherapy, evaluation of water resources monitoring and particularly establishment of a cyclotron facility for short-lived radioisotopes for medicine. The latter, with substantial national extra-budgetary contribution, resulted in the establishment of a center for advanced nuclear medicine applications in "Na Homolce" hospital in Prague (PET Centrum). (See **Attachment 4 – Summary of Past IAEA Co-operation**).

B. The Czech Republic as a Donor

The high level of expertise of Czech institutions as the Nuclear Research Institute (NRI) Řež, particularly in nuclear safety and radiation protection, and the decision of the Government to allocate the necessary financial resources to the IAEA TC projects, initiated the contribution of the Czech Republic to the Agency programme as a donor.

In 2001, the Czech Republic donated one million CZK for technical assistance to Bulgaria to increase safety of the Kozloduy NPP and through training of specialists to develop capacity, including transfer of know-how for the non-destructive tests of primary components. An additional two millions CZK were provided for continuation of technical assistance to Armenia, aimed at analysis and optimisation of primary circuit integrity at the Medzamor NPP. Up-to 0.6 million CZK was provided for technical assistance to Georgia for the organisation of the national course in radiation protection in x-ray diagnostics and purchase of dosimetric instruments to ensure regulatory body inspection activities and monitoring of radiation situation in the country.

In 2002, the Czech Republic made extrabudgetary contributions of 1.7 million CZK to the national project ARM/9/011, to support Armenia for strengthening safety of the Medzamor NPP, 0.5 million CZK to regional project RER/9/062, for technical assistance to Georgia on ensuring radiation protection, especially in medical applications, and 0.46 million CZK through regional project RER/4/024, for technical assistance to Ukraine for strengthening safety of the Zaporozhe NPP.

In 2003, the Czech Republic committed to make an extrabudgetary contribution of 1.5 million CZK to the national project of Armenia ARM/4/004/A1, for strengthening safety of the Medzamor NPP, 0,9 million CZK to Uzbekistan through regional project RER/9/058 for enhancing operational reliability and safety of research reactor in Tashkent, 0,6 million CZK to regional project RER/4/024, for enhancing of safety of the Ukrainian Zaporozhe NPP WWER and 0,4 million CZK as a contribution to regional project RER/9/065 for Moldova to support the radiation protection with emphasis on medical exposures.

IV. CURRENT TC PROGRAMME

The technical co-operation programme approved for the Czech Republic for the current cycle 2003-2004 comprises of four TC projects with a hard-core budget of US $281,712 for 2003, and US $300,780 for 2004, as well as a footnote a/ component of US $450,000 per year under the TC projects No. CZR/2/003 and CZR/4/009. Support to the Nuclear Research Institute Řež for replacement of equipment irreparably damaged by floods in 2002 is an example of prompt TC assistance to unexpected situations. The on-going TC programme for the current cycle includes the following areas:

- Strengthening the Analytical Laboratory at the National Physics Institute (CZR/2/003);
- Evaluation of Radiation Damage Attenuation in WWER Reactor Pressure Vessel and Core Internals (CZR/4/009);
- Automatic Data Acquisition and Evaluation System for Research Reactor (CZR/9/010);
- Enhancing Regulatory Body Assessment Capabilities (CZR/9/015).

Several safety missions to the Temelin and Dukovany NPPs and NRI Řež are included in the TC programme for 2003-2004 (see Chapter VI.).

The Czech Republic is also actively participating in the Europe regional TC programme dealing, with primary circuit integrity, management of radioactive wastes, safety of research reactors, harmonization of PSA practices, strengthening of safety assessment capabilities and emergency preparedness. The most important project has been regional project on WWER-1000 Design basis Documentation Management System, in which NRI Řež plays role of coordination organization. By means of regional TC programme the Czech Republic is benefiting from exchange of international experience, expertise and training. (See **Attachment 5 – Summary of On-going TC Programme**).

V. OTHER INTERNATIONAL CO-OPERATION

The Czech Republic has had very active international cooperation with a number of foreign nuclear – oriented organizations, both on bilateral and multilateral basis.

Various **PHARE projects** have been an important part of these activities related to safety upgrading. The Nuclear Research Institute Řež was the main contractor for delivery of in-core monitoring system SCORPIO to the Dukovany and Bohunice NPPs. Other PHARE projects carried out are the following:

- Reassessment of mechanical properties of reactor internals, based on investigation of exposed samples from dismantled reactor in Greifswald.
- Assessment and validation of computer codes for thermo-hydraulic calculations for nuclear reactors based on experimental data of the PSB facility.
- Safety Related Evaluation of the WWER 440/213 Bubble Condenser Experimental Qualification Project (second phase).
- Reassessment of the RPV Internals Stress State Based on Real Service Irradiated Mechanical

Properties.

In 2002, strengthening of a scientific and research co-operation with the EU countries was realized through participation in the **EU 5th Framework Programme,** covering research and technological development and was significant feature of the international co-operation. The NRI Řež took part in 45 projects, especially in "Nuclear Fission" EURATOM key activity, which implementation well progressed in 2002. The NRI has been intensively preparing for the EU 6th Framework Programme and submitted proposals for participation in various Integrated Projects (IP) or Network of Excellence (NoE) in nuclear and other areas (aircrafts). The co-operation with the leading European nuclear research centers reached a new, qualitatively and quantitatively higher level recognizing the Institute as the competent partner.

Co-operation of the Czech Republic with the **OECD Nuclear Energy Agency (NEA)** started in 1992 when the NRI first joined the Halden Reactor Project and developed significantly since 1996 when the Czech Republic was accepted into the OECD/NEA. Since then, Czech specialists take part in the Committee for Safety of Nuclear Installations (CSNI) and in all permanent Working Groups and Special Expert Groups in various specialist meetings and also in majority of the Joint Research and Database projects. Through that co-operation, the Czech Republic shares the key know-how with the most developed countries in all important areas of nuclear sector, keep the relevant national infrastructure on sufficient level, stimulate young people for work in the field and make financial expenses more effective.

Bilateral relations continued with the countries of major programmes for peaceful utilization of nuclear energy and ionizing radiation, e.g. France (CEA, IRSN), USA (NRC, DOE), Germany (BMU, GRS) and Russian Federation (Kurchatov Institute, NPPs).

One of the Czech Republic's long-term priorities in bilateral relations is the co-operation with the neighbouring countries: Austria, Germany, Poland and Slovakia, and the relations with Austria dominated during the last years in the context of the Temelin NPP commissioning. Due to the strong antinuclear position of Austria regarding the completion of NPP Temelin it was necessary to negotiate a set of arrangements between the Czech Republic and Austria on the level of Prime Ministers with the participation of EU Commissioner (12 December 2000 in Melk, Austria). The Melk process was closed in Brussels on 29 November 2001 by signatories of all three involved parties. The signatories agreed that the process has led to an improvement of the exchange of information and created prerequisites for more confidence between both countries within the dialog on nuclear energy.

VI. FOCUS OF FUTURE TC PROGRAMME

The Government of the Czech Republic considers nuclear power as an important component of the energy balance in the country. It intends to follow the strategic documents of the European Union, the Green Paper – Towards the European Strategy for the Security of Energy Supply and the Accession Partnership Agreement of the European Union. In doing so, the Czech Republic will comply with the relevant international agreements in the nuclear energy field, including the Nuclear Safety Convention. It recognizes the necessity of continuous upgrading and

modernization of the nuclear power sector in the country, as well as strengthening the national safety authority.

The TC programme in the Europe region, both „national" and "regional", is highly appreciated by the Czech Republic for its contribution to international co-operation, science and education in peaceful uses of nuclear energy and contribution to national development goals. In addition to being the beneficiary of the Agency TC Programme, the Czech Republic will continue its technical and financial support to TC projects as a donor also in the coming years. In 2004, the assistance will be focused on Armenia (continuing support to the Medzamor NPP), Ukraine (continuing support to the Zaporozhe NPP) and Kazakhstan (assistance in radiation protection with emphasis on medical exposures).

The mid term focus of the regional and/or national Technical Co-operation with the Czech Republic should concentrate on the following areas:

Nuclear safety
Nuclear applications in health and medicine
Sustainability of nuclear institutions and knowledge management

Nuclear safety

National programme: Nuclear power will remain one of the important main sources of electric energy in the Czech Republic for the foreseeable future. Czech Power Co. (CEZ) will therefore continue to focus on operational reliability and safety issues of operating units in full compliance with international safety standards and practices. This national programme will be designed, financed and implemented entirely by CEZ.

Participation in TC regional programme: High-level of plant performance and nuclear safety, sound management practices and appropriate level of maintenance resources and R&D require continued focus and exchange of experience in order to continuously and sustainably comply with international best practices and standards. To this end, the Czech Republic considers regional activities as highly beneficial and a very high priority and shall continue its active involvement in NPP-related regional activities of Europe Section. Issues of particular interest include:

- Evaluation of safety issues which are of importance for the strengthening nuclear safety of WWER reactors;
- Implementation of plant safety improvements,
- Enhancement of operational safety through development of in-service inspections techniques;
- Progress in comprehensive waste management and decommissioning preparation programmes;
- Concept of radioactive waste and spent fuel management and final disposal;
- Reconstruction of design basis of NPPs with WWER-440 and WWER-1000;
- Plant ageing management programme.

Mechanisms of the IAEA safety review missions shall be used as a tool of independent international verification in this area for the medium term.

In comparison with last 10 years, it is expected that the high frequency of the IAEA missions will be substantially lower (5-10 years).

The assistance expected for the period 2003-2004 will include:

- OSART follow-up missions of the Temelin NPP and the Dukovany NPP;
- INSARR mission at LVR 15 reactor at the NRI Řež ;
- IPSART mission at the Temelin NPP;
- Safety Issues mission at the Dukovany NPP.

Nuclear applications in medicine

The effort to strengthen radiotherapy services through new techniques and better QA/QC programmes will be further continued.

The installation of a new positron emission tomography (PET) and the radiopharmaceutical technology (F18-fluorothymidine) were accomplished as the very successful IAEA model project in 1999-2000. As the result, the radio-diagnostics of oncological diseases by nuclear medicine using PET have been made possible. The enlargement of the radio-diagnostic services is considered important, requiring the enlargement of the radio-pharmaceutical production by the Nuclear Physics Institute AV CR, however, that cannot be satisfied in a short time without technical assistance. Upgrading of relevant radiochemistry and equipment for new radiochemical laboratories are also needed.

Of great importance is constant human resources development and training, in particular in health physics (diagnostic radiology, nuclear medicine and radiotherapy), radiation physics QA/QC (preparation of guides, protocols and procedures), isotope production and radiation accidents.

Most of this programme will be financed through national resources. However, the Czech Republic will strongly support a regional co-operation for education and training.

Sustainability of nuclear institutions and knowledge management

The Czech Republic, a country with developed nuclear energy, dedicates systematic care to educating and training human resources and specialists to ensure provision of reliable operation and manufacturing of various nuclear devices, and carrying out research and developmental activities.

Utilization of the existing research reactor facilities for production of radioisotopes, material

testing (LVR-15), reactor physics (LR-0) and training (VR-1) is considered another mid term country priority. Reliable operation of research reactor facilities, improvement their safety and safety assessment in line with updated technologies will be constantly addressed. The INSARR mission (scheduled for December 2003) would be a useful vehicle for assessment of status and advice on the measures of research reactor the LVR-15 in the NRI Řež.

VII. PROPOSED PROJECT NEEDS FOR THE NEXT CYCLE

Adopting the Agency's TC Strategy and bearing in mind the fact that the Czech Republic is in the stage of transformation from a recipient position to an emerging donor state in the next decade and facing the problem of decreased attention to technical sciences and physics by younger generation, the future projects will be focused on knowledge management in a very broad sense. Topics will include areas from nuclear safety, radiation protection in medicine. Forms may include standard Agency means such as scientific visits, participation in training courses, expert missions and fellowships as well as support to small projects because science is one of the best teachers. In 2005-2006 TC cycle the Czech Republic will participate in Europe regional programme in nuclear safety and national TC project opportunities are focused on main two areas listed bellow.

Following needs for national projects have been identified as a result of CPF process:

1) Strategic planning for management, self-reliance and sustainability of national nuclear institutions

To accomplish a high degree of self-reliance and sustainability of national nuclear institutions in the Czech Republic through maintainability of these institutions and the establishment of strategic planning and knowledge management as an integral part of the management practices. The overall goal is to improve knowledge management and to make these institutions sustainable for national needs of the Czech Republic and the region.

2) Strengthening the analytical laboratory at the National Physics Institute

To continue in support of national efforts to improve the effectiveness of analytical services based on neutron and ion beam techniques and thus improve knowledge in this specific area of nuclear applications. The main objective of this national TC project is to improve the effectiveness of analytical services based on neutron and ion beam techniques at the Analytical Laboratory, Nuclear Physics Institute in Řež, and bring it to the level of a Centre of Excellence.

ATTACHMENT 1

The CPF Document

The Country Programme Framework (CPF) is a concise document specifying key areas where nuclear applications play a significant role in achieving national development objectives. This is where the Agency concentrates its technical co-operation efforts and resources. It typically covers the forward period of 4 to 6 years and is prepared in close co-operation with and endorsement of the country concerned.

In order to achieve impact, a limited number of sectoral objectives are addressed to ensure that only the highest priority projects are allocated a significant financial appropriation. Particular attention is demanded to ensure that Institutes involved in the implementation are securely established with respect to infrastructure and capacity being available to service the successful and sustained execution of the project.

The final selection of projects to be funded within this framework by the IAEA is the responsibility of the Department of Technical Co-operation, which considers the following aspects as central criteria for consideration during appraisal:

the project is oriented towards an end-user
the project responds to a major need of the country
the project is realistic
the project has strong Government commitment for sustainability
the project has visible socio-economic impact, and
nuclear technology plays a significant role

This CPF also serves to further the possibility of initiating regional projects where distinct benefits are derived from co-ordinated and co-operative activities involving typically three or more recipient Member States.

This CPF document has been prepared for the purpose of future making plans for technical co-operation between the IAEA and the Czech Republic. Primarily, this document aims at providing clear communication between all stakeholders directly involved in the development priorities of the country as coupled to the management priorities and resource limitations of the IAEA. The objective is to provide focus on a few areas, which are of priority to the Government and where technology available through the Agency can make a significant contribution leading to high quality projects. This will result naturally in providing priority guidelines for allocating resources when faced with requests for support.

The new strategy for technical co-operation pays a great deal of attention to the near-term and to medium-term programme, including high priority selection projects, which should meet the TC central criteria as set above.

ATTACHMENT 2

Major Nuclear Infrastructure

Competent authorities

The **State Office for Nuclear Safety** (SÚJB) is a central state administration body established by Law No. 21 of the Czech National Council on 21.12.1992. In July 1996, SÚJB's scope of control was extended by Act No. 85/1995 Coll. to include the areas of protection against ionising radiation. The SÚJB became an integrated body of the state administration carrying out the supervision of the whole area of the utilisation of nuclear energy and ionising radiation. In 1997, the Atomic Act was promulgated. Article 3 of the Act says: *"State administration and supervision of the utilisation of nuclear energy and ionising radiation and in the field of radiation protection shall be performed by the State Office for Nuclear Safety"*.

The SÚJB headed by the Chairperson appointed by the Government, performs its activities in co-operation and coordination with the International Atomic Energy Agency. The responsibilities and competencies of the SÚJB are defined by the Act No. 18/1997 Coll. on Peaceful Utilization of Nuclear Energy and Ionizing Radiation (the Atomic Act).

The core activities include particularly:

- Carrying out of state supervision of nuclear safety, nuclear items, physical protection of nuclear installations, radiation protection and emergency preparedness in nuclear installation premises or at workplaces using ionizing radiation sources;
- Licensing of activities under the Act No. 18/1997 Coll., e.g. siting and operation of nuclear installations and workplaces with very significant sources of ionizing radiation and radioactive wastes, transport of nuclear materials and radionuclide sources;
- Aproving of documents relating to the assurance of nuclear safety and radiation protection, as specified by the Atomic Act, limits and conditions for operation of nuclear installations, methods of physical protection, emergency codes for transport of nuclear materials and selected radionuclide sources, internal emergency plans for nuclear installations and workplaces with ionizing radiation sources;
- Specifying of conditions and requirements for radiation protection of population and exposed workers (e.g. specifying of exposure limits, definition of controlled zones), specifying of emergency planning zones and requirements for emergency preparedness of licensees under the Atomic Act;
- Monitoring of population and occupational exposure levels;
- Co-ordination of activities performed by the National Radiation Monitoring Network on the Czech Republic territory and provision of international exchange of radiation protection data;
- Keeping a national system of registration and control of nuclear materials, national registration system of licensees, imported and exported selected items, ionizing radiation sources, records on population exposure and occupational exposure;
- Professional cooperation with the International Atomic Energy Agency;
- Provision of data to municipalities and district offices about radioactive waste management

on their respective territories and provision of adequate information to general public and the Government about activities performed by the Office;

- Provision of data from measurements and evaluation of the impact of nuclear, chemical and biological substances on human health and on the environment, including evaluation of the level of protection with individual and collective protective means against such substances;
- Co-ordination and provision of activities to fulfill tasks resulting from the treaty about the ban on development, production, accumulation of supplies and use of chemical weapons and about their destruction under Act No. 19/1997 Coll. (amended with Act No. 249/2000 Coll.) and Decree No. 50/1997 Coll. and about the ban on bacteriological (biological) and toxin weapons under Act No. 281/2002 Coll.

The **Ministry of Industry and Trade** is responsible for:

- Promotion of the state industrial, trade, foreign economic and unified raw material policy, exploitation of mineral resources, energy including nuclear energy, heat energy production, gasworks, mining and processing of oil and natural gas, solid fuel, radioactive raw materials and ores;
- Metallurgy, engineering, electrical engineering and electronics, chemical industry and oil processing, rubber-making, plastic materials, glass, ceramic, textile, paper and wood processing industry, building material production, radioactive waste management, etc.;
- Domestic trade, consumer interests protection, foreign trade and support of export;
- Technical standardization, metrology and state testing;
- Industrial research, technical and technological development.

The energy policy of the Czech Republic is prepared by the Ministry of Industry and Trade as a draft open document (Energy Policy) with a horizon of 15 to 20 years, and is submitted to the Government for approval. It states, that nuclear power sector can significantly contribute to the fulfillment of the UN Framework Convention on the reduction of the emissions of greenhouse gases. In connection with the availability of the country's other primary energy sources the nuclear power sector is one of the possible ways of meeting the need for electricity after 2015. Compliance with the energy policy of the State is evaluated by the same Ministry within intervals not longer than two years; the Ministry informs the government on the evaluation results and proposes eventual modifications.

The **Radioactive Waste Repository Authority** (RAWRA) is a state administration body established according to the Act No. 18/1997 Coll. on Peaceful Utilization of Nuclear Energy and Ionising Radiation (the Atomic Act). It is responsible to the Ministry of Industry and Trade and is headed by a director appointed by the Ministry of Industry and Trade. The Authority engages in the following activities:

- Preparation, construction, commissioning, operation and closure of radioactive waste repositories and monitoring of their impact on the environment;
- Radioactive waste management;
- Conditioning of spent or irradiated nuclear fuel into a form suitable for its disposal or further utilization;
- Keeping records of radioactive waste receipts and their generators;
- Administration of payments to the nuclear account;

- Drafting of proposals for determination of payments to the nuclear account;
- Provision for and co-ordination of research and development in the field of radioactive waste management;
- Monitoring of reserves of licensees for decommissioning of their installations;
- Provision of services in the field of radioactive waste management;
- Management of radioactive waste transported to the territory of the Czech Republic from abroad when it is not possible to return it;
- Provision of temporary administration in the case of radioactive waste that has become State property.

The **Ministry of Health**, in line with "National Environmental Health Action Plan of the Czech Republic", is responsible for medical applications in the field of nuclear medicine, i.e. radio-diagnostics and radiotherapy. Supervision, inspection and promotion of measures in the area of health and environment protection against effects of ionising radiation, radioactive materials and radioactive wastes are carried out by SÚJB, in compliance with the Atomic Act.

The **Ministry of Education, Youth and Sports** is the central authority of State administration for overall strategy, educational policy and the preparation of appropriate legislative standards and executive and operational activities. It establishes upper secondary and special schools and is responsible for science policy, research and development, including international co-operation in this area. It distributes the financial resources from the State budget and introduces the general scientific research and development policy as well.

Legislation/Regulations/Standards

The Czech Republic's legislative framework is based particularly on the Atomic Act. At present, the Czech legislation in the sphere of nuclear energy and ionizing radiation consists of the following:

- Act No. 18/1997 Coll. (Atomic Act) on the State Supervision over the Nuclear Safety of the Nuclear Installations. The act corresponds, to a sufficient extent, with the reciprocal legislation of European Union member countries. Now, the Act is amended with Act No. 13/2002 Coll. and Act No. 310/2002 Coll.
- Act No. 458/2000 Coll. (Energy Act) on Business Conditions and Public Administration in the Energy Sectors and on Amendment to Other Laws.
- Act. No. 71/1967 Coll., on Administrative Proceedings (the Administrative Code),
- Act. No. 50/1976 Coll., on Land Planning and Construction Regulations (the Construction Act), in the wording of subsequent regulations,
- Act No. 552/1991 Coll., on State Inspection and Monitoring, in the wording of Act No. 166/1993 Coll,
- Decree of the SÚJB No. 317/2002 Coll., on Type-Approval of Packaging Assemblies for Transport, Storage, and Disposal of Radionuclide Sources and Nuclear Materials, on Type-Approval of Ionizing Radiation Sources, and on Type-Approval of Protective Devices for Work Involving Ionizing Radiation Sources and other Devices for Ionizing Radiation Source Handling (on Type-Approval).

- Decree of the SÚJB No. 317/2002 Coll., on Transportation and Shipment of Specified Nuclear Materials and Specified Radionuclide Sources.
- Decree of the SÚJB No. 144/1997 Coll., on Physical Protection of Nuclear Materials and Nuclear Facilities and their Classification.
- Decree of the SÚJB No. 316/2002 Coll., on Accounting for and Control of Nuclear Materials and their Detailed Specification.
- Decree of the SÚJB No. 315/2002 Coll., Specifying Activities Directly Affecting Nuclear Safety and Activities Especially Important from Radiation Protection Viewpoint, Requirements on Qualification and Professional Training, on Method to be Used for Verification of Special Professional Competency and for Issue Authorizations to Selected Personnel, and the Form of Documentation to be Approved for Licensing of Expert Training of Selected Personnel.
- Decree of the SÚJB No. 179/2002 Coll., Laying Down a List of Selected Items and Dual Use Items in Nuclear Sector.
- Decree of the SÚJB No. 307/2002 Coll., on Radiation Protection Requirements.
- Decree of the SÚJB No. 214/1997 Coll., on Quality Assurance in Activities Related to the Utilization of Nuclear Energy and in Radiation Activities, and Laying Down Criteria for the Assignment and Categorization of Classified Equipment into Safety Classes.
- Decree of the SÚJB No. 215/1997 Coll., on Criteria for Siting Nuclear Facilities and Very Significant Ionizing Radiation Sources.
- Decree of the SÚJB No. 318/2002 Coll., on Details of Emergency Preparedness of Nuclear Facilities and Workplaces with Ionizing Radiation Sources, and on Requirements on the Content of On-Site Emergency Plans and Emergency Rules.
- Decree of the SÚJB No. 106/1998 Coll., on Nuclear Safety and Radiation Protection Assurance during Commissioning and Operation of Nuclear Facilities.
- Decree of the SÚJB No. 195/1999 Coll., on Basic Design Criteria for Nuclear Installations with Respect to Nuclear Safety Radiation Protection and Emergency Preparedness.
- Decree of the SÚJB No. 196/1999 Coll., on Decommissioning of Nuclear Installations and Working Places with Important and Very Important Sources of Ionizing Radiation.
- Decree of the SÚJB No. 324/1999 Coll., on Limits of Concentration and Amount of Nuclear Material for which Nuclear Liability Requirements does not apply.
- Decree of the SÚJB No. 319/2002 Coll., on Function and Organization of National Radiation Monitoring Network.
- Decree of the SÚJB No. 419/2002 Coll., on Personal Radiation Passports.
- Decree of the Government No. 224/1997 Coll., on Payments of Radioactive Waste Producers to the Nuclear Account.
- Decree of the Government No. 11/1999 Coll., on Emergency Planning Zone.
- Unregistered regulation issued by Ministry of Trade and Industry - Statute No. MPO 9/97 on the Radioactive Waste Repository Authority.

Nuclear power status

The Czech Republic currently has two nuclear power plants in full operation:

The Dukovany NPP, four units WWER-440/213, which were put into operation in 1985-87. They were subject of the periodic safety review by the Czech regulatory authority – the SÚJB after 10 years of operation. During the last five years the Dukovany NPP produced 13,0 – 13,5 TWh per year operating safely and reliably.
The Temelin NPP, two units WWER-1000/320, which were commissioned during the last years: the 1st unit fuel loading on 5 July 2000, trial-operation on 18 April 2003; the 2nd unit fuel-loading on 5 March 2002, trial operation on 18 April 2003. It is planned that trial operation of both unit will last about 18 months.
Total share of nuclear power in electricity production shall reach more then 40% by the end of 2003.

TABLE 1. THE ELECTRICITY PRODUCTION AND INSTALLED CAPACITY SINCE 1991

Indicator	Unit	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Electricity production, total	TW·h	60,52	59,29	58,88	58,70	60,84	64,25	64,59	65,11	64,69	67,74	68,78	76,30
Steam power plants	TW·h	47,138	45,39	44,65	43,95	46,32	49,00	50,02	50,05	49,12	52,73	52,54	54,80
Hydroelectric power plants	TW·h	1,25	1,64	1,59	1,78	2,27	2,40	2,08	1,88	2,21	2,30	2,46	2,80
Nuclear power plants	TW·h	12,13	12,25	12,62	12,97	12,23	12,85	12,49	13,18	13,36	12,79	13,78	18,7
Nuclear share	%	20,50	20,66	21,45	22,11	20,10	20,00	19,34	20,24	20,65	18,76	20,03	24,50
Installed capacity, total	MW	14 957	14 499	14 227	13 851	13 803	14 974	15 103	15 513	15 216	15 324	15440	16310
Steam power plants	MW	11 626	11 277	11 028	10 652	10 594	10 896	10 954	11 112	11 270	11 431	11530	11400
Hydroelectric power plants	MW	1 360	1 400	1 402	1 396	1 399	2 014	2 050	2 033	2 153	2 097	2150	2140
Nuclear power plants	MW	1 760	1 760	1 760	1 760	1 760	1 760	1 760	1 760	1 760	1 760	1760	2760
Nuclear share	%	11,93	12,19	12,40	12,74	12,80	12,00	12,00	11,35	11,64	11,49	11,40	16,92

Source: Czech Statistical Office.

Back-end facilities (radioactive waste management)

The operation of all Czech radioactive waste repositories is undertaken by the Radioactive Waste Repository Agency (RAWRA) in compliance with relevant licences granted by the SÚJB and, as to mined cavities, in compliance with permits and licences issued by the Czech Mining Authority. The overall capacity of Czech repositories provides enough space for waste disposal for the next few decades, i.e. Dukovany up to the year 2100, Richard up to 2070, Bratrství up to 2030.

Short-lived low-level and intermediate-level waste makes up the largest category of radioactive waste in terms of volume. This type of waste, liquid or solid, is generated during the operation and decommissioning of nuclear reactors and the handling of ionising radiation sources. Low-level waste from nuclear plants is stored in a surface disposal facility at the site of the Dukovany NPP. The facility's total disposal capacity of 55 000 cubic metres (about 180 000 drums) can accommodate all the waste that it is estimated will be produced at the Dukovany and the Temelin NPPs even if their operational life is extended to 40 years, provided that the waste meets the acceptance criteria. Low-level waste generated by industrial, research and medical activities is disposed of in the Richard (near Litoměřice) and Bratrství (near Jáchymov) repositories.

The Richard repository was constructed at the site of the former Richard II limestone quarry (underground, beneath the Bídnice hill). Institutional waste has been disposed of there since 1964. The total volume of this underground facility exceeds 16 000 cubic metres, the disposal capacity making up approximately half that volume.

The Bratrství repository is designed solely for the disposal of waste containing naturally occurring radionuclides. It was constructed in a mined cavity of a former uranium mine where 5 chambers with an overall capacity of 1000 cubic metres were built. The facility was put into operation in 1972.

A certain amount of long-lived low-level and intermediate-level waste is also produced. Requirements concerning the method and quality of waste conditioning necessary for its storage and subsequent disposal in a deep geological repository will be set out at a later stage.

High-level waste and spent nuclear fuel classed as waste are unsuitable for disposal in existing repositories. The construction of a deep geological repository is proposed in the "Concept of Radioactive Waste and Spent Nuclear Fuel Management in the Czech Republic", prepared by RAWRA together with a number of other organizations. This Concept was supplemented and completed by the Ministry of Industry and Trade.

The concept has the following phases:

- 2005: construction of the interim spent fuel storage;
- 2015: selection sites with proper geological local conditions and considering local developments;
- 2025: confirmation of one site on the basis of the geological work and complex data analysis;
- 2030: preparation of construction documentation for underground research laboratory;
- 2065: commissioning of underground repository.

ATTACHMENT 3

Multilateral and Safeguards Agreements

Multilateral Agreements

	Title	In Force	Status
P&I	Agreement on the Privileges and Immunities of the IAEA	1993-09-27	succession: 1993-09-27
VC	Vienna Convention on Civil Liability for Nuclear Damage	1994-06-24	accession: 1994-03-24
VC/OP	Optional Protocol Concerning the Compulsory Settlement of Disputes		Non-Party
CPPNM	Convention on the Physical Protection of Nuclear Material	1993-01-01	succession: 1993-03-24
NOT	Convention on Early Notification of a Nuclear Accident	1993-01-01	succession: 1993-03-24
ASSIST	Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency	1993-01-01	succession: 1993-03-24
JP	Joint Protocol Relating to the Application of the Vienna Convention and the Paris Convention	1994-06-24	accession: 1994-03-24
NS	Convention on Nuclear Safety	1996-10-24	Signature: 1994-09-20 approval: 1995-09-18
RADW	Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management	2001-06-18	Signature: 1997-09-30 approval: 1999-03-25
PVC	Protocol to Amend the Vienna Convention on Civil Liability for Nuclear Damage		Signature: 1998-06-18
SUPP	Convention on Supplementary Compensation for Nuclear Damage		Signature: 1998-06-18
RSA	Revised Supplementary Agreement Concerning the Provision of Technical Assistance by the IAEA (RSA)	1993-01-01	Signature: 1990-09-20

Last updated on 2003-03-11

Safeguards Agreements

Reg. No	Title	In Force	Status
1693	Agreement between the Czech Republic and IAEA for the Application of SG in connection with the NPT of Nuclear Material	1997-09-11	Signature: 1996-09-18 Ratification: 1997-07-10
1739	Protocol Additional to the Agreement between the Czech Republic and the International Atomic Energy Agency for the Application of Safeguards in Connection with the Treaty on the Non-Proliferation of Nuclear Weapons	2002-07-01	Signature: 1999-09-28 Ratification: 2002-06-21

ATTACHMENT 4

Summary of Past IAEA Co-operation

(TC Programme for the 1993 – 2002 cycle)

Completed Projects (23)

Project Number	Title	Field	Completed on	Total Budget
CZR0002	Manpower Development	0A	1997-04-06	14,923
CZR0003	Upgrading University Training Courses in Reactor Physics	0I	1998-01-30	78,159
CZR0004	Economic Review for the Completion of the Temelin NPP	0A	1999-08-30	36,763
CZR3002	Remediation for Uranium Mill Tailings Impoundments	3D	2001-02-21	43,639
CZR4002	Use of Burnable Absorbers in WWER-Type Reactors	4E	1996-02-29	4,113
CZR4003	Quality Assurance in Commissioning and Operation of NPPs	4M	1996-02-21	31,210
CZR4004	Enhancement of Availability and Safety of WWER-Type NPPs	4G	1996-02-21	4,674
CZR4005	Assessment of Corrosion of Zircaloy Cladding in Nuclear Fuel	4E	2002-09-09	330,518
CZR4007	Cyclotron for Short Lived Medical Radioisotopes	4H	2003-07	3.194,2
CZR6002	Quality Assurance Programmes in Radiology and Radiotherapy	6B	2000-07-13	114,533
CZR8002	Evaluation of Water Resources Monitoring	8M	1998-10-28	11,850
CZR9002	Assessment of Environmental Risks in the North Bohemia	9G	1994-08-18	9,019
CZR9003	Selection and Safety Review of NPP Sites	9F	1998-02-27	23,620
CZR9004	Nuclear Safety Review Missions	9F 9D	1995-06-27	11,480
CZR9005	Strengthening National Regulatory Capabilities	9F 9B	1998-01-30	142,797
CZR9006	Severe Accident Simulator for Dukovany NPP	9D	1998-01-30	95,934
CZR9008	Safety Culture in Regulatory Practices	9B	1998-01-30	57,383
CZR9009	Environmental Restoration for a Spent Fuel and Radwaste Site	9F	1998-01-30	87,563
CZR9010	Radioactive Waste Characterization Programme	4O	2001-01-31	171,281
CZR9011	Regulatory Assessment of Civil Structures in NPPs	9F	2001-04-02	72,816
CZR9012	Strengthening Rad. Protection Inspectors' Qualifications	9B	2001-09-13	14,831
CZR9013	Establishment of Radiation Protection and Safety Training Centre	9C	2003-07	130,863
CZR9014	Equipment Replacement at the Nuclear Research Institute	9C	2003-07	50,000

TABLE 1. DISBURSEMENT INCLUDING IN-KIND CONTRIBUTIONS BY MAIN FIELD OF ACTIVITY FOR THE CZECH REPUBLIC 1993-2002

Field	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	Grand Total
0: GENERAL ATOMIC ENERGY DEVELOPMENT	18974,93	0	0	0	64526,79	754,27	49641,24	0	0	0	**133897,23**
1: NUCLEAR PHYSICS	2194,67	0	0	0	0	0	0	0	0	0	**2194,67**
3: PROSPECTING, MINING AND PROCESSING OF NUCLEAR MATERIALS	0	0	14139,02	4779,41	7345,72	17416,29	1694,21	640	0	0	**46014,65**
4: NUCLEAR ENGINEERING AND TECHNOLOGY	16641,03	15167,95	50816,02	179926,3	78255,28	658617,71	2223846,16	410246,8	167763,5	178904,3	**3980185**
6: APPLICATION OF ISOTOPES AND RADIATION IN MEDICINE	0	0	0	0	51333,28	40793,1	22009,82	5335,64	5726,31	13310,98	**138509,13**
8: APPLICATION OF ISOTOPES AND RADIATION IN INDUSTRY AND HYDROLOGY	0	5439,3	0	18450	0	0	0	0	0	0	**23889,3**
9: SAFETY IN NUCLEAR ENERGY	136100,44	123695,4	152909,8	219047	59692,81	21126,25	12103,77	30374	58960,02	98160,16	**912169,61**
Grand Total	**173911,07**	**144302,6**	**217864,8**	**422202,7**	**261153,88**	**738707,62**	**2309295,2**	**446596,44**	**232449,83**	**290375,44**	**5236859,59**

TABLE 2. THE IAEA MISSIONS AT THE DUKOVANY NPP

Date	Mission	Focus
September 1989	OSART mission	Operational safety review
October 1991	RE-OSART mission	Inspection on implementation of recommendations and proposals of the previous OSART mission
October 1993	ASSET mission	Evaluation of significant events from safety point of view
October 1995	Safety Issues mission	Safety improvement review
October 1996	ASSET follow up mission	Evaluation of significant events from safety point of view
September 1998	IPPAS mission	Physical protection review
November 1998	IPERS mission	Study review – PSA level 1
November 2001	OSART mission	Operational safety review

TABLE 3. THE IAEA MISSIONS AT THE TEMELIN NPP

Date	Mission	Focus
April 1990	Site safety review mission	The site selection assessment including demography, dispersion and external events
April-May 1990	Pre-OSART mission	Evaluation of 10 safety aspects of the standard agenda of Pre-OSART mission
June-July 1990	Design review mission	The reactor core and safety systems design assessment
February 1992	Pre-OSART mission follow-up visit mission	The review of the implementation of Pre-OSART findings and recommendations made in 1990
March-April 1993	QARAT mission	QA system assessment, mainly management and QA Department functions
May 1993 December 1993 December 1994 December 1995	Leak Before Break Application review mission	A review of the modern Western conception application during the integrity assessment of the high energy stressed pipelines
February 1996	Fire safety mission	A fire analysis, licensing and operation performance review from fire safety point of view
May 1995 January 1996	Probabilistic Safety Assessment review missions	Transfer of technology, methodology and results of the PSA study review
March 1996	Safety issues of WWER 1000 resolution review mission	A review of resolution of WWER 1000 safety issues at Temelin NPP identified by the IAEA
September 1998	IPPAS mission	The review of the NPP Physical Protection aspects defined by the IAEA
February 2000	Operational Preparedness and Plant Commissioning Review Mission	The review of the operating practices and preparedness in the areas of Management, Organization and Administration, Operations, Maintenance and Commissioning
February 2001	Pre-OSART mission	Evaluation of preoperational safety aspects of the standard agenda of IAEA Pre-OSART mission
November 2001	Safety issues of WWER 1000 resolution review follow up mission	A status review of resolution of WWER 1000 safety issues at Temelin NPP identified by the IAEA
April 2002	IPPAS follow up mission	The review of the NPP Physical Protection aspects

ATTACHMENT 5

Summary of On-going Programme

Active Projects (5)

Project Number	Title	Field	1st Year of Approval	Total Budget
CZR2003	Strengthening the Analytical Laboratory at the National Physics Institute	2C	2003	29,280
CZR4009	Evaluation of Radiation Damage Attenuation in WWER Reactor Pressure Vessel and Core Internals	4K	2001	590,840
CZR4010	Automatic Data Acquisition and Evaluation System for Research Reactor	4M	2001	84,092
CZR4011	Non-Destructive Examination of Radioactive Waste Packages Containing Transuranic Elements	4O	2001	192,690
CZR9015	Enhancing Regulatory Body Assessment Capabilities	9B	2003	131,360