SLOVAKIA
(UPDATED 2011)

1. GENERAL INFORMATION

1.1. COUNTRY OVERVIEW

The size of the Slovak Republic is 49 035 km2 with 40% of the area situated up to the elevation of 300 m, 45% at the elevation between 300 and 800 m, and 15% at the elevation above 800 m. The lowest point is the mouth of Bodrog River at the elevation of 95 m and the highest situated point is Gerlachov peak at the elevation of 2656 m.

Agricultural surface covers 49.9% from the entire Slovak territory, and forest surface 40.6%. The longest dimension in the east-west direction is 428 km (Záhorská Ves - Nová Sedlica) and in the north-south direction 195 km (Štúrovo – Slatité). The Slovak Republic is a new country situated in the Central Europe. It was established on January 1, 1993. It is situated between 16°50'04" and 22°34'20" of east longitude, and between 47°35'55" and 49°36'54" of north latitude in climatic zone.

The average annual temperature - a long-term average between 1901 and 1950 - is 10.1°C in Bratislava and the average rainfall is 670 mm. Tab. No. 1 shows typical parameters from the Meteorological stations Jaslovské Bohunice and Mochovce.

By 31. 12. 2009, there were about 5 424 925 inhabitants and the density of the population was 110,3 inhabitants per km2. 2 365 800 people were economically active, out of which 927 900 (27%) in industry and Bilding (3,5%) and 99 300 in agriculture (4,5%) and 1 329 600 in services (57%).

Fig. No. 1 Map of the Slovak Republic

1.1.1. GOVERNMENTAL SYSTEM

Slovakia is a parliamentary democracy. State power originates from citizens who exercise it directly by participating in national elections. The three branches of political power-executive, legislative, and judicial are collaborative in nature and monitor each other's functions. The National Council of the Slovak Republic, the Government, and the President are the supreme bodies of state power of the Slovak Republic.

1.1.2. GEOGRAPHY AND CLIMATE

Slovak Republic is a central European country with vast forest areas extending on two fifths of its territory. Its total area of 49,035 km2 does not rank Slovakia among large countries. Slovakian westernmost and easternmost points are separated only by 429 km. Slovak Republic is bordered on the north by Poland; on the south by Hungary; on the west by Czech Republic and its eastern border is formed by Ukraine.

Slovakia's northernmost point is situated nearby Babia Hora, located in today's cadastral territory of Oravská Polhora. The southernmost point of Slovakia is situated on the Danube River close to a city called Patince. The easternmost point is situated on the Morava River in Záhorská Ves and the westernmost one nearby Nová Sedlica. Located about 600km on the south-east, an Adriatic Sea is the nearest sea to the landlocked Slovakia. Slovakian surface is very irregular, characterized by lowlands, valleys, hills, highlands and mountain chains. The lowest point of Slovakia lies on a place where the Bodrog River crosses the border with Hungary, at 94 m above sea level. The highest point lies in the High Tatras on Gerlachovský Peak at 2655 m above seal level. The south and the south-east of the country are covered mostly by lowlands: Eastern Slovak Lowland, Záhorská Lowland and Danubian Lowland which is the most fertile and famous one. A great part of the Slovak territory is covered by protected landscape areas. Slovak topography is dominated by the Carpathian Mountains. Their well known mountain chains are: Slovak Ore Mountains; volcanic Štiavnica Mountains; Low Tatras, Greater Fatra and Lesser Fatra. High Tatras is the most famous Slovakia mountain and it is the only mountain range with an Alpine character on the Slovak territory.

Parameter	Bohunice	Mochovce
Elevation above sea	176 m	261 m
Average annual temperature	9,3 °C	9,1°C
Average annual humidity	76%	75%
Average annual rainfall	548 mm	560 mm
Dominant wind direction	north-west	north-west

Wind velocity	3.4 m/s	107 m/s

1.1.3. POPULATION

TABLE 1. POPULATION INFORMATION

Year	2000	2005	2006	2007	2008	2009	2010
Population (millions)	5,4	5,4	5,4	5,4	5,4	5,4	5,4
Population density (inhabitants/km2)	110	109,9	110	110,1	110,3	110,3	
	53	53	53	53	53	53	53
Area (1000 km2)	49						

Source: Slovak Statistic Office

1.1.4. ECONOMIC DATA

TABLE 2. GROSS DOMESTIC PRODUCT (GDP)

	2005	2006	2007	2008	2009	2010
GDP (millions of current US$)	61377	69191	84376	98565	87875	87456
GDP (millions of constant 2000 US$)	49302	53988	65111	73942	66709	66069
GDP per capita (PPP* US$/capita)	13500	15000	17000	18100	17200	18307
GDP per capita (current US$/capita)	11393	12835	15635	18233	16220	16106

* PPP: Purchasing Power Parity **

Constant prices chain-linked with reference year 2000 are used

Latest available data Source: uroeconom.sk

1.2. ENERGY INFORMATION

1.2.1. ESTIMATED AVAILABLE ENERGY

TABLE 3. ESTIMATED AVAILABLE ENERGY SOURCES

	Solid	Liquid	Natural Gas	Uranium	Hydro	Other Renewable
Total amount in specific units*	1087	10	26	10 000		
Total amount in Exajoule (EJ)					0,02	0,21

* Solid, Liquid: Million tons; Gas: Billion m3; Uranium: Metric tons; Hydro, Renewable: TW

Source: Slovak Minerals Yearbook 2010

Ministry of Economy of SR

1.2.2. ENERGY STATISTICS

Slovakia has only a limited amount of available domestic energy resources, i.e. brown coal, oil, natural gas and renewable resources. Table No. 6 shows the basic energy statistics. Installed capacity by 31.12.2009

TABLE 4. ENERGY TATISTICS

							Average annual growth rate (%)
	2000	2005	2006	2007	2008	2009	2000 to year*
Energy consumption**							

- Total	0,77	0,81	0,77	0,77	0,77		
- Solids"*	0,19	0,18	0,17	0,18	0,17		
- Liquids	0,12	0,15	0,15	0,16	0,16		
- Gases	0,25	0,25	0,22	0,21	0,21		
- Nuclear	0,21	0,21	0,19	0,17	0,18		
- Hydro	0,01	0,00	0,00	0,02	0,02		
- Other Renewables		0,02	0,02	0,03	0,03		-
Energy production							
- Total	0,28	0,29	0,27	0,25	0,26		
- Solids***	0,04	0,03	0,02	0,02	0,03		
- Liquids		0,01	0,01	0,01	0,01		
- Gases	0,01	0,01	0,01	0,00	0,00		
- Nuclear	0,21	0,21	0,19	0,17	0,18		
- Hydro	0,02	0,02	0,02	0,02	0,01		
- Other Renewables		0,02	0,02	0,03	0,03		
Net import (Import - Export)							
- Total	0,49	0,52	0,50	0,52	0,50		

* Latest available data

** Energy consumption = Primary energy consumption + Net import (Import - Export) of secondary energy.

*** Solid fuels include coal, lignite

Source: Ministry of Economy of SR

1.2.3. ENERGY POLICY

Energy policy of the Slovak Republic was approved by the resolution of the Slovak Government in 2009. Long-term energy policy is based on the permanent reduction of energetic intensity of economy. The objective is formulated so, thus its realisation

provides accessibility of the energy for all end customers in real time and on the economically effective principle.

The long-term objective of energy policy of the Slovak Republic is:

- to provide the certain amount of electric power that covers the demand on the economically effective principle,
- to provide safe and reliable supply of all forms of energy in required quantity and quality,
- to reduce the share of gross domestic consumption on the gross domestic product - reduction of energetic intensity.

To reach the objective of energy policies, these essential priorities are specified:

1. to substitute the closed electric energy production facilities so, thus the substitution provides such amount of electric power that covers primarily the domestic demand on the economically effective principle,
2. to take measures directed to energy saving and to increase energetic efficiency of consumption,
3. to decrease the dependence of energy supplies on the dangerous localities - diversification of energy sources and transport roads
4. to utilize domestic primary power sources to generate the electric power and heat on the economically effective principle,
5. to increase the using of combined electric power and heat production
6. to use nuclear power as a diversified, economically effective and environmentally accepted possibility of electric power production
7. to secure the nuclear safety of Nuclear power plants operation
8. to increase the shares of renewable energy sources in the production of electric power and heat with the aim to create appropriate supplementary sources to cover the domestic demand
9. to complete the grid and wiring so, thus they are able to provide the safe and reliable transmission, transport and distribution of electric power and gas
10. to build new connecting lines to improve connection within EU inner market and also the market of the third countries
11. to support using of alternative fuels in the transport.

These specified tasks (only 9) in the power industry have been fulfilled up to now and there are expectations for their further successful fulfilment within the framework of the accepted "Energy Concepts of the Slovak Republic till 2005". The fundamental document, defining main targets, directions and framework of power development, is the Power Policy of the Slovak Republic approved by the Slovak government decree No. 5 dated 12 January 2000. The power policy defines the framework for new orientation of the power sector and has three pillars:

1. preparation for the integration into internal markets of the European Union,
2. security in power supplies,
3. sustainable development.

The main target of the preparation for integration into the EU internal markets is transformation of the power sector into a compatible one that is able and prepared to be incorporated into a united European market. The power sector transformation is conditioned by meeting the basic measures: restructuralization and privatization of power utilities, establishment of independent regulatory authority, making energy prices more realistic for all categories of consumers, completion and approval of legislation adapting power sector. The intentions of the power policy are as follows:

- create competitive power sector able to access EU;
- establish conditions for stakeholders to enter electricity grid and to create competitive environment;
- minimize involvement of the state in the direct control of the sector;
- ensure non-discriminating and transparent conditions for all subjects participating in the generation, transmission, distribution and sale of power;
- make possible a gradual liberalization of power market for legitimate customers.

Another important measure related to nuclear power sector is the governmental decree on the closure of the two oldest units at the Bohunice V-1 nuclear power plant (EBO) in 2006 and 2008, respectively. By implementing a programme of modernization and safety upgrading of the V-2 Bohunice nuclear power plant, extension of the V-2 design lifetime will be enabled with the high level of safety maintained. The decision on the completion of Mochovce units 3 and 4 will depend on the interest of a strategic partner, as no guaranty of the state is possible. In the field of electric power sector it is expected that a major part in the increase of electricity demand will be covered by developing the production of independent generators, mainly based on steam-gas cycle.

The development of heat supply systems, based mainly on centralized methods of heat supply for communal consumption and industrial technology processes, will depend on accelerated elimination of deformations in the prices of electricity and natural gas. The process of making these prices more realistic has been already launched according to a time schedule accepted. A profitable geography position and significant location of Slovakia in regard to transit of natural gas through its territory into Western Europe create good preconditions for building a "Gas Centre" with European-wide importance. Notwithstanding the high level of reliability of gas supply from the Russian Federation, it will be necessary to look for possibilities in diversification of gas imports from other territories. A similar suitable situation relates to the strategic assurance of oil imports. In line with EU legislation and with a bill under preparation on mandatory reserves of oil products, capacities for the storage of mandatory oil reserves (90-day reserve) will be gradually built. Based on a government decision to use preferentially for electricity production (up to the amount of 10% from total electricity consumption) domestic brown coal, that is the only significant fuel source, gradual extraction of coal and lignite resources in line with mining capabilities will be made possible. Protection of the environment is one of determining factors of the power policy. The legislation framework in effect and international obligations of Slovakia in the area of reduction of the production of emission materials provide the starting point for the acceptance of programs for emission reduction and increased utilization of renewable resources. For the implementation of these programs, coordinated progress of a number of industrial sectors and incorporation into practice of system measures in the field of tax and price policies, ecology and legislation is needed.

1.3. THE ELECTRICITY SYSTEM

1.3.1. ELECTRICITY POLICY AND DECISION MAKING PROCESS

Act 656/2004 Coll. on Energy and consecutive amendments sets the legal basis for the energy sector, Act 276/2001 Coll. on Regulation in Network Industries and consecutive amendments defines provisions for regulatory measures. The Ministry of Economy issues authorizations for planned new energy infrastructure investments on accordance with the Long-term Concept of the Energy Policy which the Ministry updates every 5 years. The current Energy Policy of the Slovak Republic was adopted by the Slovak Government in January 2006.

The government adopted the Strategy of Energy Security of SR (SES) in October 2008, with a view to enforce energy industry as a principal sector of the National Economy. The strategic document sets the priorities and proposes substantial measures to achieve enhanced energy security and to further increase energy self-sufficiency of Slovakia up to 2030.

For the purpose of restoring self-sufficiency in electricity domain, which was lost as a result of an early closure of 2 units of NPP Jaslovské Bohunice V-1, these important power sources, set as priority projects of the SES, are under construction:

- Units 3 and 4 of NPP Mochovce with installed electrical capacity of 880 MW and the start of operation in 2012/13,
- CCGT PP Malženice with installed electrical capacity of 436 MW and the start of operation in late 2010,
- Increasing the electrical capacity of NPP Jaslovské Bohunice V-2 by 120 MW until the end of 2010

After running into operation of the named capacities, the electricity balance will be equalized in 2012 and export ability will be restored with the operation of Mochovce Unit 4.

According to SES, nuclear energy remains the main safeguard of SR energy security in electricity over the long-term perspective. Therefore, the Government approved in December 2009 the establishment of the Jadrová energetická spoločnosť Slovenska, j.s.c. so as to ensure the preparation, construction and operation of a new nuclear power plant in Jaslovské Bohunice with a electrical capacity of 1200 to 1700 MW. The government holds 51 % majority share. The power plant witch costs of approximately 3.3 bil. Euro is going to ensure electricity self-sufficiency for a long period after the year 2020.

The Act 309/2009 Coll. on Support for RES and High-efficient co-generation creates favourable conditions for investing into these areas, in order to fulfil our national target of 14 % renewable energy sources share on final energy consumption in 2020, set by the EU.

With the aim of enhancing the level of transmission system operation security, continuous works on the construction of new 400 kV lines between Moldava - Košice and Moldava – Lemešany are in place. Preparations are being done on the construction of 2 x 400 kV line Veľký Ďur – Gabčíkovo and interconnections with neighbouring countries.

1.3.2. STRUCTURE OF ELECTRIC POWER SECTOR

Generation

The most significant position among the electricity producers is held by Slovenské elektrárne a. s. (hereinafter as „SE“). With its production and purchase from long- term contractual capacities, it secures no less than 81 % of the SR electricity consumption. There is a real assumption that the SE position in the SR electricity market shall be even higher after finishing the third and fourth unit of the Nuclear Power Plant (hereinafter as „NPP“) Mochovce, and that despite the facts that two units of the NPP V-1 Jaslovské Bohunice have been decommissioned as of 31 December 2006 and 31 December 2008, resulting in the fact that the Slovak Republic has lost its self-sufficiency in the field of electricity generation.

Other electricity producers are disposing of practically one type of a power plant, and each of them has a market share of less than 5 % (e.g. PPC Power, U. S. Steel Košice, Tepláreň Košice, Slovnaft, Mondi SCP, Slovintegra, Vodohospodárska výstavba). Generation in industrial power plants is secured mainly for self- consumption. The big CHP power plants provide electricity supply mainly to the so- called electricity end- consumers in households and small businesses.

- Slovenské elektrárne a. s.: www.seas.sk

Transmission

The Slovak transmission system is of a relatively high transmission capacity of the inter-state interconnections. The electricity system partially utilizes imports from abroad for securing electricity supply.

The TSO SEPS is involved in the system of coordinated explicit auctions of the trilateral region (ČEPS, VE-T, PSE-O). On the profile with Hungary, there were realized bilateral explicit auctions, on the profile with Poland unilateral explicit auctions,both on the basis of the NTC capacities methodology.

Since 1 September 2009, the interconnection of organized short- term electricity markets has been in place between Slovakia and the Czech Republic. The cross- border transmission capacity necessary for electricity transmission from one national market to another is allocated in the form of a so- called daily implicit auction, while the capacity being a part of traded electricity- this is called Market Coupling. The project complies with the intentions of the European Union to create common electricity market by means of interconnecting the national electricity markets, and is in a full compliance with the Regulation No. 1228/2003/EC. The interconnection of Czech and Slovak national electricity markets through an implicit allocation of the transmission capacity is a pilot project within the Central and Eastern Europe region.

- The Slovak transmission system: www.sepsas.sk

Distribution and supply

As from 1st July, 2007, the legal unbundling of electricity supply from electricity distribution took place in the vertically integrated companies Západoslovenská energetika (hereinafter as „ZSE“), Stredoslovenská energetika (hereinafter as „SSE“) and Východoslovenská energetika (hereinafter as „VSE“). Thus, three legally independent companies as operators of regional distribution systems emerged: ZSE Distribúcia, Stredoslovenská energetika – distribúcia and Východoslovenská distribučná, with the

license for conducting business in electricity distribution, and electricity supply is being secured by three so-called household electricity end-suppliers ZSE-Energia, SSE and VSE. Further electricity suppliers are represented by electricity producers, small businesses and electricity traders. By the end of 2008, the market was covered by 296 electricity supply licensees. Out of the mentioned number, there were 120 traders purchasing electricity for its further sale. In several cases, these are organizational items of foreign companies.

As from the same date of 1st July, 2007, the electricity market is open to all electricity consumers including households, based on the European legislation provisions (Directive 2003/54/EC). The electricity market opening was not still proved in full extent, in particular in the category of household consumers. Despite this fact, the SR households experienced for the first time an opportunity to order electricity from another than their traditional end- supplier. In 2008, when compared to 2007, the customers in a slightly broader extent used possibilities of electricity supplier switching, and thus were assisting in the process of competition improvement in the area of electricity retail market and in the process of competition environment improvement in this field.

- Západoslovenská energetika („ZSE"): http://www.zse.sk/
- Stredoslovenská energetika („SSE"): http://www.sse.sk/
- Východoslovenská energetika („VSE"): http://www.vse.sk

1.3.3. MAIN INDICATORS

TABLE 5. ELECTRICITY PRODUCTION, CONSUMPTION & CAPACITY

	2005	2006	2007	2008	2009
Capacity of electrical plants (GWe)					
- Thermal	3.16	3.09	2.85	2,66	2.01
- Hydro	2,94	2,49	2,48	2,52	2,48
- Nuclear	2,44	2,64	2,18	2,18	1,82
-Wind	< 0,01	<0,01	<0.01	<0.01	
- Geothermal					
- other renewable					0.79
- Total	8,55	8,22	7,51	7.36	7.1

Electricity production (TW.h)					
- Thermal	8.98	8.75	8.09	7,97	4.768
- Hydro	4.74	4.45	4.48	4,24	4.662
- Nuclear	16.34	18.01	15.35	16,71	14.081
-Wind	< 0,01	<0,01	<0.01	<0.01	
- Geothermal					
- other renewable					2.56
-Total (1)	30.06	31.23	27.91	28.96	26.764
Total Electricity consumption (TW.h)					27.386

(1)Electricity transmission losses are not deducted.

*Latest available data : Ministry of Economy of SR

TABLE 6. ENERGY RELATED RATIOS

	2005	2006	2007	2008
Energy consumption per capita (GJ/capita)	142.5	144.45	139.77	138,11
Electricity consumption per capita (kW.h/capita)	5580	5495	5490	5395
Electricity production/Energy production (%)				
Nuclear/Total electricity (%)	54.3	57.7	51.8	56,7
Ratio of external dependency (%)				

(1)Net import

2. NUCLEAR POWER SITUATION

2.1. HISTORICAL DEVELOPMENT AND CURRENT ORGANIZATIONAL STRUCTURE

The Slovak Republic is substantially dependent on import of primary power sources representing as much as 90 per cent of inland consumption. The most important import items of the primary power sources represent the crude oil, ground gas, black coal and nuclear fuel from the Russian Federation.

The production of nuclear power plants participates markedly in the coverage of the overall consumption of electricity in the Slovak Republic. At present there are 5 nuclear units (equipped with nuclear reactors WWER-440) in operation in Slovak Republic, as well as other nuclear installations located at Jaslovské Bohunice and Mochovce sites. Until 2006 all the nuclear units were operated or decommissioned by the company Slovenské elektrárne, a. s. In 2006 the company for decommissioning of nuclear power installations (VYZ, o. z. Jaslovské Bohunice) was set apart, including 2 units of NPP V-1 and NPP A-1 being under decommissioning and based at Jaslovské Bohunice site. New company's business name was GovCo, a. s., afterwards it was renamed to JAVYS, a. s. On December 31, 2006 the operation of NPP V-1 unit was terminated in accordance with commitment of the Slovak Republic, resulting from EU Accession Treaty.

Slovakia substantially dependent on imports of primary power sources representing as much as 78 per cent of inland consumption. The most important import items of the primary power sources represent the crude oil, gas, black coal and nuclear fuel from the Russian Federation.

As to the nuclear resources a reduction occurred. By December 31, 2006 unit 1 of NPP Bohunice V-1 and by December 31, 2008 unit 2 of NPP Bohunice V-1 were shutdown. Altogether 880 MW was put out of service. In such a way since 2007 Slovakia transferred from being exporter of electricity to be again an electricity importer. Imports in 2007 reached 1 725 GWh – 5.8 %; in 2008 521 GWh – 1.7 % and 1312 GWh – 4.9 % in 2009.

As a substitution for shutdown nuclear sources a completion of Nuclear Power Plant Mochovce, units 3 and 4 with an installed capacity 2 x 440 MW started in November 2008 with a term of unit 3 commissioning in 2012 and unit 4 in 2013.

The following objectives are relevant for future utilization of the nuclear power-plant engineering in the Slovak Republic:

Short-term objectives:

- to ensure the modernization, improve the safety and capacity of NPP V-2 unit at Jaslovské Bohunice site,

- to compile the conception of economic, factual and time procedure of solution on spent nuclear fuel management and procedure of solution on nuclear Installations decommissioning and submit them for approval procedure,
- to adopt relevant decisions and start the works concerning finishing of the 3rd and 4th unit of the power plant Mochovce,
- to create conditions for activity of the „Nuclear Forum“ in the Slovakia.

Mid-term objectives:

- realization of programme of nuclear safety improvement in the NPP V-2 unit – to supplement the list of measures focused on achievement of safety level in accordance with requirements of the Nuclear Regulatory Authority of the Slovak Republic and IAEA,
- to ensure the modernization and power output increase of the 1st and 2nd unit of the nuclear power plant Mochovce,
- to put into operation the 3rd and 4th unit of the power plant Mochovce as the significant factor of stabilization and safety of the electric power supply in the Slovakia.

Strategic objectives:

- the fulfilment of international agreements in the field of environment, nuclear safety, investments and trade in power engineering (Kjótó Protocol, Convention on Nuclear Safety, Energy Charter, Protocol to Energy Chapter on energy effectiveness issues and adjacent ecological aspects, etc.),
- to prepare new projects concerning the construction of nuclear sources completing and replacing the decommissioned capacities,
- final solution of the conception nuclear fuel cycle back end.

Reorganization of the SE, a. s. company

In 2003 the Board of Directors of the company SE, a. s. approved the Strategic Plan of the company SE, a. s. for the period from July 1st 2003 to December 31st 2005. The aim of this plan was the financial stabilization of the company and its preparation for competitive market environment in the field of power-plant engineering through internal restructuralisation of the company SE, a. s. The project Restructuralisation of the company

SE, a. s. was one of the main tools supporting the fulfilment of objectives of the Strategic Plan. The main tools for mentioned period were:

- reduction of total costs of the company,
- reduction of number of employees.

The side effect of the changes was the transformation of functionally managed company to procedurally managed company. The expected benefit of the project was the achieving of higher market value of the company before the sale of the stocks to foreign investor.13 procedural areas including the full set of activities performed in the company SE, a. s. were restructuralised. This restructuralisation involved the reorganization of the procedures of Operation and Assets Management and centralization of following procedures or activities; internal audits and inspection, legal affairs, environment, planning, financing, accounting, telecommunication, human resources, employee's affairs, registry, quality, defence and protection, public relations - communication, public tender, nuclear safety and radiation safety, physical security, fire protection, transport, supply, investments, maintenance and processes in the field of technical support. The project Restructuralisation of the company SE, a. s. was finished in December 2005. Changes and related arrangements of the organizational structure of the company SE, a. s. were implemented after previous detailed analysis and subsequent setting-up of restructuralised processes. In 2006 (even before the integration of the company SE, a. s. to the company Enel S.p.A) the company for decommissioning of nuclear power installations (VYZ, o. z. Jaslovské Bohunice) based at Jaslovské Bohunice site - was set apart (including 2 units of NPP V-1 and A-1 NPP being under decommissioning). The business name of new company was GovCo, a. s.; afterwards it was renamed to JAVYS, a. s. The operation of the 1st Unit of NPP V-1 unit was terminated on December 31, 2006 and the 2nd Unit of NPP V-1 was terminated on December 31, 2008 in accordance with commitment of the Slovak Republic resulting from EU Accession Treaty. At present there are 4 nuclear units with nuclear reactors WWER-440 in operation in Slovakia, as well as other nuclear installations located at Jaslovské Bohunice and Mochovce sites.

2.1.1. OVERVIEW

Brief overview of main decisions and events related to the implementation and development of the nuclear programmes is given as follows.

A-1 Bohunice:

1956	Intergovernmental agreement between the former USSR and CSSR on the construction of an industrial-research nuclear power plant on the territory of CSSR.
1957	Establishment of an investment enterprise Nuclear Power Plant A-1 by

	the decision of the Governmental Committee for Nuclear Energy and of the Authority for Nuclear Power Management.
1958	Beginning of A-1 construction.
1972	The research and development reactor KS 150 at A-1 reached criticality. Gradual increase of the electric output up to the maximum value of 127 MW. Connection of A-1 to the electric grid.
1976	First serious incident at the KS-150 reactor.
1977	The decisive severe accident during reactor refuelling.
1978	Decision of CSSR government to decommission A-1.
1992	Slovak government accepted the global concepts of A-1 decommissioning.
1999	UJD issued decision No. 137/1999 - approving decommissioning plan for decommissioning NPP A-1 - Stage 1 - scheduled till 2007. Plant status will be: all spent fuel permanently removed from the plant, majority of liquid RAW adjusted to a form enabling safe final disposal; all remaining RAW treated to a form enabling their safe permanent disposal or long-term storage; the necessary decontamination of premises and rooms performed.
1999	Last two transports of spent nuclear fuel took place - all spent fuel produced during the operation has been transported from the site back to the Russian Federation.
2009	Works related to the second decommissioning stage were realized. This stage is scheduled to last to 2016.
2010	Works related to the second decommissioning stage were realized. This stage is scheduled to last to 2016. Complete process of decommissioning would be finished in 2033.

V-1 Bohunice:

1969	Decision of the State Planning Commission of CSSR based on an agreement with USSR to start the construction of nuclear power plants with pressurized water reactors of VVER 440 type.
1970	Decision of CSSR and USSR governments to supply two nuclear power plants each with two VVER reactors 440 MW.
1971	Establishment of affiliated organization in Jaslovské Bohunice.

1973	Laying of foundation stone for the construction of main production building.
1978	V-1 Unit 1 reactor made critical.
1979	Commissioning of V-1 Unit 1 into trial operation.
1980	Commissioning of V-1 Unit 1 into commercial operation. V-1 Unit 2 reactor made critical. Commissioning of V-1 Unit 2 into trial operation.
1981	Commissioning of V-1 Unit 2 into commercial operation.
1984	Re-evaluation of V-1 safety.
1986	Other safety measures to enhance nuclear safety.
1990	Execution of reviews to evaluate V-1 conditions.
1991	CSKAE Decision about V-1 operation based on implementation of additional safety measures.
1991-1995	Implementation of Phase 1 measures to upgrade safety by backfitting V-1 units.
1995-2000	Implementation of Phase 2 measures with the objective to achieve European standards and maintain V-1 in operation.
2001	Nuclear regulatory autority of Slovak republic issued decisions No. 144 & 220/2001, approving further operation of Unit 1&2.
2006	The first Unit was shut down.
2008	The second Unit was shut down
2009	Spent fuel from the first unit was transported to the Interim spent fuel storage facility, Bohunice
2010	Spent fuel from the second unit was transported to the Interim spent fuel storage facility, Bohunice.

V-2 Bohunice:

1976	Agreement signed with USSR on the construction of V-2 in Jaslovské Bohunice. Beginning of V-2 construction.
1984	V-2 Unit 1 reactor made critical. Commissioning of V-2 Unit 1 into trial operation.

1985	Commissioning of V-2 Unit 1 into commercial operation. V-2 Unit 2 reactor made critical. Commissioning of V-2 Unit 2 into trial operation. Commissioning of V-2 Unit 2 into commercial operation.
2000 - 2001	Concept of modernization and safety upgrading elaborated - approved by UJD decisions No. 214/2000 and No. 250/2001.
2001 – 2007	Implementation modernization and safety upgrading
2009	On the decision of UJD an authorization to increase the thermal power output of the reactor of the 3-rd unit by 1% was issued, i.e. from the value of 1430 MWt to 1443,75 MWt. Power level of unit 4 was increased in 2009 by 5% of the original nominal thermal power, i.e. from 1375 MWt to 1443,75 MWt. Gradual power uprate of both units will continue during the year 2010 as well.
2010	From the 2010 both NPP´s units are operated on increased thermal power output of the reactor 1471MWt, which represent increased by 7% of the nominal thermal power.

Mochovce 1&2

1974	Preparatory studies, survey works, sociology survey.
1978	Federal Ministry of Fuel and Power approved an investment intention to construct two twin-reactor units with the capacity of 440 MW each.
1981	Physical start of Mochovce construction.
1983	Establishment of a concern enterprise Atomic Power Plants Mochovce with its headquarters in Mochovce.
1989	The original deadline for Mochovce Unit 1 commissioning failed to be met due to necessary replacement of inadequate instrumentation and control system.
1995	The way of funding the construction of Mochovce Units 1 and 2 was still open, construction and installation works continued in a minimum extent only. (The funding of Mochovce completion was resolved by the Government Decision No.339/96 dated May 14,1996).
1998	Commissioning of Unit 1 - reactor reached first criticality on 9. 6. 1998
1999	Unit 1 in commercial operation since 23. 4. 1999. Commissioning of Unit 2 - reactor reached first criticality on 1.12.1999.
2000	Unit 2 in commercial operation since 31.10.2000.

	Government decree - 257/2000 - government did not suspended the completion of the construction of units 3 and 4; rather it decided to abstain from granting sovereign guarantees for loans to be used to finance the completion (construction frozen since 1994).
2009	Units 1 and 2 of NPP Mochovce operated safely at uprated power level of 107% of the original nominal thermal power.
2010	Periodic safety assessment after ten years of operation, which is necessary to permit the operation of this plant for a further period of ten years, was completed.

Mochovce 3&4

2006 - 2007	ENEL-SE. - EMO3&4 Feasibility Study
2008	SE took decisions to complete the construction of units 3&4 in time horizon 2012 and 2013
2009	Conservation and protective works on units 3 and 4 of NPP Mochovce were under way and UJD controls and evaluates regularly their status. During the year 2009 the owner was submitting to UJD for review and approval QA documentation for classified equipment that will be part of the technology. After the decision about finishing the construction of the 3rd and 4th unit up to 2012 and 2013 respectively, the owner performed design works on realization documentation and civil works related to civil constructions reparation were started and finished.
2010	Massive construction works are carrying out on the nuclear installation.

2.1.2. CURRENT ORGANIZATIONAL CHART(S)

Licences:

Slovenské elektrárne, a.s. (SE, plc.): www.seas.sk

JAVYS, a.s.: www.javys.sk

Governmental organizations with responsibility in nuclear field:

Nuclear Regulatory Authority of the Slovak Republic: www.ujd.gov.sk

Ministry of Health - Public Health Authority: www.uvzsr.sk

Ministry of Economy of the Slovak Republic: http://www.economy.gov.sk

Ministry of Environment of the Slovak Republic: http://www.minzp.sk/

2.2. NUCLEAR POWER PLANTS: OVERVIEW

The owner of the Bohunice V-2 and Mochovce plants is the utility ENEL/Slovenské elektrárne, a. s. (SE). The operators of these four units are SE affiliations Nuclear Power Plants Bohunice and NPPs Mochovce. The owner and operators of the Bohunice V-1 and A-1 is the utility JAVYS, a. s. After privatisation SE, a. s. was establish GovCO company, which was rename to JAVYS. The Nuclear Power Plants Bohunice have built their own technical and professional capacities for the performance of maintenance activities. The execution of specialized activities is ordered by NPPs Bohunice and NPPs Mochovce from manufacturers of these components, or from specialized firms. The training of nuclear personnel, i.e. operators and maintenance and decommissioning personnel, is carried out by the Training Center in the VUJE, Inc. VUJE performs professional, practical and theoretical training of nuclear power plant personnel in six categories. The Category 1 is designed for selected personnel, e.g. operators, control physicists and reactor unit supervisors. Following successful graduation from theoretical and practical training, trainees obtain certificates. For the performance of a function, the Category 1 personnel have to obtain a NRA SR license that has to be renewed each two or three years depending on the function. The main domestic producer and supplier of selected components of pressure systems (separators, piping, heat exchangers) for nuclear power plants is the Slovak Power Engineering Works (SES) in Tlmace and the Piping Company in Kosice. The supplier of civil construction works has been the Hydrostav Bratislava. The main foreign suppliers are Atomenergoexport (Russia), ŠKODA, Vítkovice ironworks and EGP (Czech Republic). Well-known Western firms (EdF, Framatome ANP) have been cooperating with them and with VUJE, Inc. company during Mochovce completion and Bohunice safety upgrading programs.

2.2.1. STATUS AND PERFORMANCE OF NUCLEAR POWER PLANTS

TABLE 7. STATUS OF NUCLEAR POWER PLANTS

Station	Type	Net	Operator	Status	Reactor	Construction	Criticality	Grid	Commercial	Shutdown

		Capacity (Mwe)			Supplier	Date	Date	Date	Date	Date
BOHUNICE V-2; Unit 3	PWR	408	Enel/SE	Operational	SKODA	1976/12/01	1984/08/07	1984/08/20	1985/02/14	
BOHUNICE V-2; Unit 4	PWR	408	Enel/SE	Operational	SKODA	1976/12/01	1985/08/02	1985/08/09	1985/12/18	
MOCHOVCE; Unit 1	PWR	405	Enel/SE	Operational	SKODA	1983/10/01	1998/06/09	1998/07/04	1998/10/29	
MOCHOVCE Unit 2	PWR	405	Enel/SE	Operational	SKODA	1983/10/01	1999/12/01	1999/12/20	2000/04/11	
BOHUNICE A-1	HWGCR	110	JAVYS	Permanent Shutdown	SKODA	1958/08/01	1972/10/04	1972/12/25	1972/12/25	1977/02/22
BOHUNICE V-1; Unit 1	PWR	408	JAVYS	Permanent Shutdown	AEE	1972/04/24	1978/11/27	1978/12/17	1980/04/01	2006/12/31
BOHUNICE V-1; Unit 2	PWR	408	JAVYS	Pernament Shutdown	AEE	1972/04/24	1980/15/03	1980/03/26	1981/01/01	2008/12/31
MOCHOVCE Unit 3	PWR		Enel/SE	Under Construction		2008	-		2012	
MOCHOVCE Unit 4	PWR		Enel/SE	Under Construction		2008	-		2013	

* UCF (Unit Capability Factor) for the latest available year (only applicable to reactors in operation). ** Latest available data

+ Date, when first major placing of concrete, usually for the base mat of the reactor building is done. ++ Date of the first connection to the grid Source: PRIS database (www.iaea.org/pris).

2.3. FUTURE DEVELOPMENT OF NUCLEAR POWER

2.3.1. NUCLEAR POWER DEVELOPMENT STRATEGY

The document „New nuclear source at the Jaslovské Bohunice site“ was approved by the Slovak Governmental Resolution no. 948 from 17.12.2008 , in which the Slovak government required the analysis of legal and economical implications in the context of further aggrieved alternative areas utilization in the locality of NPP Bohunice and establishment of a joint venture consisting of companies JAVYS, a. s. and ČEZ, a. s. (where JAVYS, a. s. has a majority status). This joint venture will implement the construction of New Nuclear Source at the Jaslovské Bohunice site.

The proposal for establishment of the company „Nuclear Energetic Slovak Company“ (further reffered to as JESS, a. s.) was approved by the Slovak Governmental Resolution no. 893 from 9.12.2009. JESS, a. s. was established as a joint venture consisting of the companies JAVYS, a. s. and ČEZ, a. s. The shares of both investors are in compliance with the stockholder contract – 51% for JAVYS, a. s. and 49% for ČEZ, a. s.

PLANNED NUCLEAR POWER PLANTS

Station/Project Name	Type	Capacity	Expected Construction Start Year	Expected Commercial Year
Project of the New nuclear source	PWR	1000-1700 MWe	2017	2023

2.3.2. PROJECT MANAGEMENT

At the moment is company JESS, a. s just preparing the feasibility study, which shall assess the possibility for project implementation on site, so we cannot provide any further data in the chapters 2.3.2 and 2.3.3 yet.

2.3.3. PROJECT FUNDING

Project of the New nuclear source will be funding and financing by private sectors.

2.3.4. ELECTRIC GRID DEVELOPMENT

Asked data in this chapter will not be known until the Feasibility study will be done in 2010. We suppose that in connection with construction of new nuclear source will be needs to build up new 400 kV distribution plant near the source and solve the connection to the electricity supply system SR.

2.3.5. Site Selection

In the „Energy safety strategy of the SR“, approved by the Slovak government No. 732 from 15.10.2008 is among strategic priority inscribed construction of new nuclear source in the area of Jaslovské Bohunice and analysis of construction of new nuclear plant in the east of Slovakia, the Kecerovce locality. The locality of Jaslovské Bohunice is used for nuclear energy, there is NPP A-1 – decommissioning phase, NPP V-1 – phase of finishing the operation with stand off reactors and NPP V-2 in operation. The availability of the locality for construction (sufficient of the cooling water, infrastructure, influence on environment) will be consider until the Feasibility study will be done in 2011, in the recent phase preparation of the project we have not sufficiency of information to answer required questions.

2.4. ORGANIZATIONS INVOLVED IN CONSTRUCTION OF NPPS

The contractual strategy adopted for the completion of the units 3 & 4 of Mochovce nuclear power plant is multi contractual (more than 100 contracts). The role of architect engineer is held by the Owner (ENEL/Slovenské elektrárne). Main contracts are awarded to ENEL INGEGNERIA E INNOVAZIONE for the engineering, procurement and construction management of the conventional island, to ENSECO (auxiliary and emergency systems, radioactive waste and disposal systems), VUJE (diagnostics and ventilation systems, laboratories, etc.), ISKE (civil works) and ŠKODA JS (reactor, steam generators, main piping and valves, etc.) for the engineering, procurement and construction of the nuclear island.

As architect engineer, SE has planned to create a large project team that will have more than 300 resources at the peak: its task is to manage and coordinate engineering, construction and commissioning activities throughout the execution of the entire project.

SE’s policy for national and local industrial involvement is to maximize the project spin-off for the Slovak and Czech market: more than 85% of awarded contract are in the Slovak and Czech market so far.

2.5. ORGANIZATIONS INVOLVED IN OPERATION OF NPPS

Ownership structure of SE, a. s. is the following: the National Property Fund owns 34 % and the company ENEL SpA owns 66 % of SE shares. The company’s line of business includes electricity generation, imports, exports, sales and distribution. SE, a. s., provides heat generation, sales. Joint-stock company SE is the operator of two nuclear power plants, two thermal power plants, and 34 hydroelectric power plants.

SE keeps relationships with different external organizations either in business area or based on valid legislation. SE co-operates with contractors who provide specific services such as selected maintenance activities, deliveries of components and equipment or research works. It co-operates with national and international supervisory and advisory authorities: NRA of the SR, IAEA, WANO and others.

Following companies provides services for the operator

VUJE,.s. Trnava (www.vuje.sk)	Institute for Nuclear Power Plants is an engineering, design and research organization. The company takes part in developing new solutions for nuclear power industry, upgrading and testing of NPP safety.
JAVYS, a. s. (www.javys.sk)	State-owned company responsible for NPP decommissioning and spent nuclear fuel handling.
VUEZ, a. s. Levice (www.vuez.sk)	Research Institute for Power Facilities is an engineering, manufacturing and installation company. The company concentrates on specialised and superior-standard operations in the field of power engineering.
Energoprojekt Slovakia, a.s. (www.netax.sk/energoprojekt)	Company develops its activities in designing, engineering and consulting areas related to nuclear equipment.
Škoda Slovakia, s. r. o.	Technical end engineering services, pipelines, turbines, generators and fittings
ENSECO, a. s. (www.enseco.sk)	Company provides services in the field of the technological units supply and their commissioning in power industry.

2.6. ORGANIZATIONS INVOLVED IN DECOMMISSIONING OF NPPS

JAVYS, a.s. is holder of licence for decommissioning of NPP A-1. A continual variant for decommissioning of NPP A-1 was chosen and this decommissioning project is divided into 5 stages. Project is now in second stage (06. 2009 – 12.2016) – „Decommissioning of non-productive equipments and objects“. JAVYS, a. s. is owner of equipments for treatment with RAW and provides the decommissioning activities with own staff. There was an international tender for choosing a general supplier for the second stage of decommissioning project of NPP A-1. A successful tenderer was company VUJE, a. s. VUJE,

a. s. has a system of subcontractors, but some decommissioning activities provides also with own staff.

Decommissioning: information and plans

Basic legislation on decommissioning in Slovak Republic is given by Act No. 541/2004 Coll. "Atomic Act" and Act No. 24/2006 Coll. on Environmental Impact Assessment. The operator is responsible for decommissioning of nuclear facilities.

Act No. 238/2006 Coll. stipulates activities of the National nuclear fund for decommissioning of nuclear installations and management of spent fuel and radioactive waste (Nuclear Fund Law).

NPP Decommissioning conception in SR

There are three basic scenarios considered in the decommissioning conception:

- NPP decommissioning up to I. degree - the closing with surveillance
- NPP decommissioning up to II. degree - with reactor safe enclosure
- NPP decommissioning up to III. degree - to green-field

NPP A-1 decommissioning conception:

There were available three potential scenarios:

1. Continuous decommissioning scenario
2. Nuclear island safe enclosure scenario
3. Reactor safe enclosure scenario

The "Continuous decommissioning scenario" for NPP A-1 was recommended based on technical-economic assessment and considered as the most suitable from these evaluated scenarios. It will be ended by removing of the NPP and by release of the site for an unlimited using.

NPP A-1 decommissioning consists of two fundamental time phases:

A. operation termination after reactor shutdown - since shutdown in 1977 until 1999 Project design for NPP A-1 decommissioning was elaborated (1995-1999) Official License for A-1 decommissioning was issued by UJD in 1999.

B. A-1 decommissioning - the time phase after 1999 until 2033 or 2056 based on the selected scenario that involves two periods of A-1 decommissioning:

- period of decommissioning NPP A-1 since 1999 until 2007: can be characterized as follows - all spent fuel has to be removed from the site, majority of liquid RAW has to be treated to yield a form enabling safe permanent storage, other RAW have to be adjusted to yield a form enabling safe permanent disposal or long-term storage, necessary decontamination to reduce further potential sources of radioactive leakage should be performed;
- period of decommissioning NPP A-1 after 2007: it presents the dismantling and liquidation of NPP A-1 and the release of the site for an unlimited using (to green-field)

NPP with VVER 440 units decommissioning conception (Bohunice V-2 and Mochovce):

At first the document on decommissioning of NPP with VVER 440 units has been elaborated. Based on the comparing of the individual decommissioning scenarios and using the multicriterial analyses, the decommissioning to the I. degree (the closing with surveillance for 30 years) and subsequent dismantling and liquidation of NPP to green-field resulted as the most suitable scenario. In this case the NPP VVER 440 decommissioning, after the termination of operation consists of two following periods:

1. period of decommissioning: the condition establishing and the operation of the plant in the state "the closing with surveillance" for the time of 30 years
2. period of decommissioning: the dismantling and liquidation of NPP and the release of the site for an unlimited using (to green-field)

NPP V-1 decommissioning conception

Based on the Government decree (resolution) No. 801/1999 units V-1 was shutdown in 2006 Unit 1 and in 2008 Unit 2. Subsequently the termination of operation will be finished, when all spent fuel is removed from reactors to the intermediate spent fuel storage facility.

Description of Nuclear Power Plant A-1

The nuclear power plant A-1 was in operation between years 1972 - 1977. There were two operational events during this period. During the first one in January 1976, a fresh fuel assembly was ejected right after its charge into reactor channel and the cooling gas has partially leaked. During the next operational accident in February 1977, the cladding of the technological reactor channel has failed in its core and the moderator penetrated into cooling circuits. The liquidation of the consequences of the latter appeared as a complicated problem in that time. After technical, economical and safety analyses of restarting the operation of NPP

A-1, it was decided in 1978 not to restart it, but commence activities heading towards its decommissioning.

In the following period, a project for the I. stage of decommissioning of NPP A-1 was elaborated. It was aimed at achievement of radiation safe state, which meant for NPP A-1 the removal of all spent fuel,

leftover RAW conditioning or its safe storing, restoration of constructional barriers and de-isolation of NPP A-1 objects, containing inventory of ra-substances. The implementation of the I. stage is scheduled in the period 1998 – 2007.

Parallel with completion of the I. stage, preparatory works for the consequent II. stage are performed; the plan of the II. stage is laid out for a time period until 2016. The objective of the II stage is the dismantling of low and medium contaminated equipments and technological circuits, as well as the dismantling of non-utilizable original construction objects. In the following stages of NPP A-1 decommissioning, an entire dismantling of reactor vessel, its constructional parts and its supporting equipment is considered. The overall process of NPP A-1 decommissioning is planned to be completed by the year 2033.

2.7. FUEL CYCLE INCLUDING WASTE MANAGEMENT

Procurement of New Nuclear Fuel

All the fuel for the operation of four VVER 440 units in Slovakia has been fabricated in the Russian Federation. The fuel supplier provides completed fuel assemblies, including nuclear material, its conversion and enrichment. In 2003 SE,a. s. concluded new fuel contract with Russian Supplier for delivery of fresh nuclear fuel for NPP Bohunice units 3 & 4 and NPP Mochovce units 1 & 2 in period 2005 - 2010. The supplied fuel will be of new generation (new mechanical and nuclear design with burnable Gd absorber) and should result in better efficiency and lower annual consumption of nuclear materials.

Management of Radioactive waste and Spent Fuel

The basic policy of spent fuel and radioactive waste management has been established by the Resolutions No. 930/1992, No. 190/2000 of the Slovak government.

(1) The responsibility for the safe management of radioactive waste prior to their receipt at the repository shall be with the originator of the radioactive waste.

(2) Treatment of radioactive waste shall mean actions leading to the creation of a form suitable for shipment and disposal or storage of radioactive waste.

(3) Radioactive waste shall be managed in a way:

a. to maintain subcriticality,

b. to secure removal of residual heat,

c. to minimize effects of ionising radiation on staff, population and the general environment,

d. to take into account properties influencing nuclear safety such as toxicity, flammability, explosiveness, and other hazardous properties.

(4) Generation of radioactive waste and management of radioactive waste shall follow technical and organisational measures so as to keep their amount and activity as low as reasonable achievable.

(5) The responsibility for disposal of radioactive waste from nuclear installation and disposal of institutional radioactive waste as well as responsibility for closure of repository and its institutional control shall be with the State under conditions laid down by this Act and other generally binding legal regulations.

(6) Radioactive waste repository may be placed on land in a State-ownership only, in accordance with the approved Concept of Territorial Development of Slovakia and other approved territorial-planning documentation.

(7) Unless otherwise specified by specific Act28), costs associated with the management of radioactive waste including costs of the provision for institutional control after the closure of repository shall be borne by the originator of radioactive waste.

(8) In the case of radioactive waste whose originator is not known or where originator is not capable of managing radioactive waste safely the Authority shall appoint another authorisation holder for management of radioactive waste. In its decision, the Authority shall define the scope of the management of such radioactive waste.

(9) Costs associated with the management of radioactive waste whose originator is unknown or costs incurred by authorisation holder appointed by the Authority pursuant to Section 8 shall be borne by State Fund for Decommissioning of Nuclear Energy Installations and Management of Spent Fuel and Radioactive Waste. When the originator of radioactive waste is identified subsequently, he shall be liable to reimburse the Fund for the costs incurred upon the management of the radioactive waste.

(10) All activities during radioactive waste management shall be directed towards safe disposal thereof.

(11) Imports of radioactive waste to the territory of the Slovak Republic shall be banned, except for cases under which the procedure pursuant to § 16 is complied with and except for imports of radioactive waste authorised by the Authority,

a. that was generated by reprocessing and treatment of radioactive materials exported for this purpose and re-shipment of which was permitted by the Authority in advance,

b. for purposes of their processing or treatment on the territory of the Slovak Republic provided that the export of materials with aliquot activity has been contractually provided and authorised by the Authority.

(12) The provisions of the Sections 1 through 11 shall also apply accordingly to spent fuel management; the responsibility for the spent fuel management until its delivery and its receipt to repository shall be with the authorisation holder who (which) has produced the spent fuel.

(13) Details concerning requirements for spent fuel management, with the emphasis on its storage and disposal and for management of radioactive waste, including its generation, classification of radioactive waste into classes, and details of requirements for its imports, and of requirements for the scope and contents of the documentation upon the management of radioactive waste, of requirements for equipment for management of radioactive waste, of requirements for record-keeping about management of radioactive waste shall be laid down by a generally binding legal regulation to be issued by the Authority.

Material and Financial Provision of Radwaste Management

The new plant, subsidiary of SE company, marked VYZ established in 1996, is being responsible for Decommissioning of Nuclear Power Installations and Radioactive Waste and Spent Fuel Management. Besides that, the SE-VYZ plant will provide the disposal of institutional radwaste from other organizations. The plant activities are being financed from the SE utility budget and from the State Fund for Decommissioning of Nuclear Power Installations and Radioactive Waste and Spent Fuel Management. In July 2005 SE-VYZ was delimited from the utility SE and state-run company GovCo was etablished. In August 2006 GovCo was transformed to a joint stock company JAVYS, Inc.

The State Fund was established by the Act No. 254/1994 Coll. with effect from 1 January 1995. Mentioned Act was afterwards amended by the following acts: Act No. 78/2000 Coll. and Act No. 560/2001 Coll. The main aim of amendments was especially modification how to create and use the resources of the Fund.

The Ministry of Economy administers the Fund and the fund resources are controlled on the special account in the National Bank of Slovakia.

By the mentioned act the sources of the Fund shall be generated from:

a. contributions by nuclear installation operators,

b. penalties imposed by Nuclear Regulatory Authority of the Slovak Republic upon natural persons and legal entities pursuant to separate regulation

c. bank credits

d. interest on Fund deposits in banks

e. grants from State Budget

f. other sources as provided by special regulation.

The basic resources of the Fund are contributions of operators of nuclear facilities. In compliance with above mentioned act, operator of nuclear facility is obliged to contribute yearly to the Fund the sum 11 000 € for each megawatt of installed electric power of the nuclear facility and 6,8 % from sales price of electric power generated yearly in the nuclear facility.

The Fund Council as his advisory body has been appointed by The Minister of Economy for generation and utilization of Fund resources.

It is possible to provide resources of the Fund as specific subsidy to the operator of nuclear facility or spent fuel and radioactive waste repository and to the person determined for the management of orphan sources on the basis of written application accompanied by the project with technical and economic reasoning.

It is possible to use the Fund resources for:

a. decommissioning of nuclear facilities,

b. management of spent fuel and radioactive waste after the end of nuclear facility operation (where were originated),

c. management of orphan sources and waste from illicit trafficking when originator is unknown,

d. purchase of site for spent fuel and radioactive waste repositories,

e. research and development in the area of decommissioning of nuclear facilities and management of spent fuel and decommissioning radioactive waste,

f. investigation of sites, geological survey, design, construction, commissioning, operation and closure of spent fuel and radioactive waste repositories including monitoring after their closure,

g. expenses related to the Fund activities up to 0,3 % of annual income of the Fund,

h. contributions on protection of life and health of population in the hazard area of nuclear facility.

The resources of the State Fund have been formed since 1995. The generation of NPP A-1 finished in 1977, therefore no resources from NPP A-1 have been created. NPP V-1 shall be untimely shutdown, so the contributions from NPP V-1 will not be sufficient for decommissioning. That is why accumulated financial resources into Fund will not be sufficient to build a deep geological repository for high level radioactive waste and spent

fuel elements. At the present time the analysis, models and possibilities of the Fund creating are being worked out, to be sufficient for all fuel cycle back-end in Slovakia. Based on the new Act on State Fund is being preparing to resolve the issue of financing of NPP A-1 and NPP V-1 decommissioning.

2.8. RESEARCH AND DEVELOPMENT

2.8.1. R&D ORGANIZATIONS

The research and development activities in Slovakia are based on national long-term strategic plans transferred into medium-term projects, which reflect country specific conditions and needs of the utilization of nuclear energy in Slovakia. The strategic plans and projects are bound to international research and development activities, particularly those conducted within EU countries or OECD/NEA.

The research and development in Slovakia is financed from the state budget completed by funds from private sector or support from EU. The expenditures to research and development in Slovakia are limited. They represent several hundred thousands USD per year.

Utility's technical support organizations and universities initiate the research and development. The activities are focused on effective and efficient use of nuclear fuel, efficient conversion of nuclear energy into heat and electricity, treatment and disposal of radioactive materials and spent fuel, improvement and validation of analytical computer codes, emergency preparedness and panning, and in support of safety enhancement of nuclear facilities. The Slovak regulatory body initiates the research and development work where it considers that there is a need for additional studies beyond those undertaken by utilities or it can apply to suitable critical considerations in its review and assessment.

The organizations, which conduct the research and development in Slovakia, are:

- VUJE, a.s. Trnava
- VUEZ, a.s.Levice
- DECOM SLOVAKIA, s.r.o. Trnava
- Relko, Ltd. Bratislava,
- Slovak Technical University, Bratislava, and others.

2.8.2. DEVELOPMENT OF ADVANCED NUCLEAR TECHNOLOGIES

Slovakia has not developed any advanced nuclear reactors. Engagement of national companies in the development of advanced nuclear reactor systems is limited and performed in co-operation with foreign companies on commercial basis.

2.8.3. INTERNATIONAL CO-OPERATION AND INITIATIVES

Slovakia is a member of following international organisations :

- International Atomic Energy Agency (IAEA)
- Nuclear Energy Agency (OECD/NEA)
- The Comprehensive Nuclear Test Ban Treaty Organisation (CTBTO)
- Western European Nuclear Regulatory Associations (WENRA)
- Forum of State Nuclear Safety Regulators of Countries with WWER Reactors
- (WWER Forum)

The Nuclear Regulatory takes part in several international co-operations including:

- European High Level Group on Nuclear Safety and Waste Management organised by the EU (cooperation to progressively develop a common understanding and furthering common approaches in priority domains related to the safety of nuclear installations)
- Standing committees of the OECD Nuclear Energy Agency (CNRA, CRPPH, RWMC)
- WENRA
- NERS (association of countries with small nuclear programmes)
- Zangger Committee (dealing with controlling the export of nuclear materials and equipment)
- Nuclear Suppliers Group ((NSG) dealing with controlling the export of nuclear materials and equipment and the dual use materials and equipment).

Slovakia has bilateral governmental agreements with neighbouring countries - Austria, the Czech Republic, Poland, Ukraine, Hungary and with others - Canada, the United States of America, Germany, Romania, Russia, Slovenia, France

2.9. HUMAN RESOURCES DEVELOPMENT

High quality of human resources is the basic prerequisite for providing for safe, reliable, economical and ecological operation of nuclear installations. The term “high quality human resources“ means a summary of professional, health and mental capacity of employees for performance of work activity with license holders. From the view of

influence of work activities on nuclear safety the staff of the license holder are divided into two basic groups:

- Employees having direct impact on nuclear safety – selected employees, whose special professional competence is verified by an exam (written exam, oral exam and verification of competencies on a representative full-scale simulator) and a practical exam before an examination committee for selected employees, which is established by ÚJD, which issues License of Special Professional Competence;

- Employees having impact on nuclear safety – professionally competent employees, whose professional competence was verified by an expert committee established by the operator of a specialized facility in a form of written and oral exams and which issues a Certificate of Professional Competency. Depending on the nature of works they are divided to daily and shift professionally competent employees.

Special professional competence of employees according to Act No. 541/2004 Coll. l. on peaceful use of nuclear energy means a summary of expertise, practical experience, principal attitudes and knowledge of generally binding legal regulations and operating procedures issued by the license holder for ensuring nuclear safety, which is necessary for performing work activities having direct impact on nuclear safety.

Professional competence means summary of expertise, practical experience, knowledge of generally binding legal regulations and operating procedures issued by the license holder and necessary for performing work activities of license holder's employee. Professional competence is acquired by successful completion of training at a specialized facility.

The license holder is responsible for general (professional, health and mental) capacity of his employees to perform work activities at nuclear installations. The license holder charges his employees with performance of work activities. For every selected and professionally competent employee a "Mandate for performance of work activities" is issued as part of integrated management system (IMS) of quality assurance for nuclear installation – license holder. The Authorization to Perform Working Activities is issued for a given position and specific nuclear installation only for those selected and professionally competent employees of the authorization holder, who have valid Licenses of Special Professional Competency or Certificates of Professional Competency. The authorization is an evidence of working competency of an employee in relation to regulatory authorities.

In the system of professional training each position has defined requirements for education, experience, training, health and mental capacity. The direct supervisor of the employee is responsible for meeting these requirements.

Within system of professional training of employees of the license holder is updated on the basis of operational experience, implemented organizational changes, technical solutions (modernization) carried out on the equipment, and requirements of regulatory bodies, audits, reviews and recommendations from the IAEA. This is provided for by necessary human, financial and material resources.

Professional training of employees of the license holder, as well as the staff of the third parties (third parties are the contractor organizations) is carried out in compliance with the management documentation of the quality assurance program developed and maintained in compliance with:

- Generally binding legal regulations;
- The IAEA standards, recommendations and guides;
- STN EN ISO 9001:2001 and 14001:2004 standards;
- Management documentation of the Quality System.

Management documentation for the area of human resources including professional training and development of employees and the management set procedures and responsibilities for:

- Selection and assignment of employees to positions;
- Determination of types and phases of training, education and development of employees;
- Acquisition, maintenance and improvement in qualification – professional and special competence of employees;
- Development of employees;
- Acquisition and maintenance of general competencies of contractor staff;
- Re-training for change in position.

2.10. STAKEHOLDER COMMUNICATION

Licensees and regulatory bodies consider the policy of transparency to be the key element in all stakeholder communication.

Media

Media are recognized as primary means of information dissemination to the public, therefore SE, a. s. gives full attention to all media requests. Regular meetings with journalists are organizes, both formal and informal, to give them comprehensive information on the activities of SE, a. s.

Neighbouring countries

Slovenske elektrarne respects all international obligations of the Slovak Republic and is committed to developing good relations with neighboring countries. It complied with all requests for public hearing or consultations during the EIA process and communicates with all appropriate authorities on crossborder issues.

Local communities

SE, a. s. considers local communities to be of primary importance. It established or supported the establishment of civic information committees which are the key information channel for local communities. They comprise of local leaders and elected representatives who meet regularly with managers of SE, a. s. to discuss and topical issues pertaining to the operation of power plants and views and activities of local communities. Representatives of municipalities are invited to all major events to receive all current and comprehensive information. SE, a. s. works with local NGOs and supports a number of projects as a part of its CSR activities.

General public

It is important for SE, a. s. that the general public is as well informed about the operation of power plants as possible. Therefore it supports all activities that contribute towards that goal and organizes a number of its own initiatives, such as Open plants, a series of family public events where citizens have a chance to take a tour of power plants. In its Information center over 20.000 citizens annually receive information and ask question on all aspects of operation of power plants SE, a. s. published annual report and other materials where citizens can find information on the company.

Stakeholder organizations

SE, a. s. takes an active approach with respect to its participation in stakeholder organizations and provides various level of support depending on the relevance and significance of each organization.

Institutions

Cooperation with institutions is very open and effective. Interagency task groups have been formed to address various issues, including the EIA process, access of public to information and others. In addition, there are numerous and frequent contacts with representatives of institutions on as needed basis.

3. NATIONAL LAWS AND REGULATIONS

3.1. REGULATORY FRAMEWORK

Nuclear Regulatory Authority of the Slovak Republic (Úrad jadrového dozoru - UJD)

UJD is a central state administration authority. It provides the execution of state regulatory activities in the field of nuclear safety of nuclear installations, including

regulation of management of radioactive waste, spent fuel and other parts of the fuel cycle, as well as transport and management of nuclear materials including their control and record keeping system. It is responsible for the assessment of goals of nuclear energy program and of quality of the classified equipment, as well as for commitments of the Slovak Republic under International agreements and treaties in the said field.

Role of the Regulatory Authority (UJD)

Pursuant to § 29 of Act No. 575/2001 Coll., UJD provides for the exercise of state regulation for nuclear safety of nuclear installations, including regulation of the management of radioactive waste, spent fuel and other parts of the fuel cycle, as well as of nuclear material, including their control and record keeping system. It ensures assessment of goals of nuclear energy use program and of quality of classified equipments and nuclear technology equipments, as well as of commitments of the Slovak Republic under international agreements and treaties concerning nuclear safety of nuclear installations and management of nuclear materials. Pursuant to the Act No. 541/2004 Coll., UJD performs the state regulation of nuclear safety of nuclear installations; in particular it:

- carries out inspections of workplaces, operations and premises of nuclear facilities, operations and premises of approval or authorization holders; checks the fulfilment of obligations pursuant to this Act, generally binding legal provisions issued on its basis, operational procedures issued by the authorization holder, whether limits and conditions of safe operation and safe decommissioning, quality assurance system, as well as of duties arising from decisions, measures or orders issued pursuant to the Atomic Act, are being observed, inspects fulfillment of commitments under international agreements and treaties signed by the Slovak Republic in respect of UJD competency,
- inspects the system of professional training of employees, training programs of employees with professional competency, training programs of licensed employees of authorization holders, and inspects professional competency as well as special professional competency of authorization holder employees,
- investigates in site the status, causes and consequences of selected failures, incidents and accidents at nuclear installation or events during transport of radioactive materials,

3.1.1 STRUCTURE OF REGULATORY BODIES

Regulation over peaceful use of nuclear energy is performed by the ministries and other central bodies of state administration and organizations within their competency as stipulated by the relevant laws according to the structure as illustrated on fig. 3.1.1.

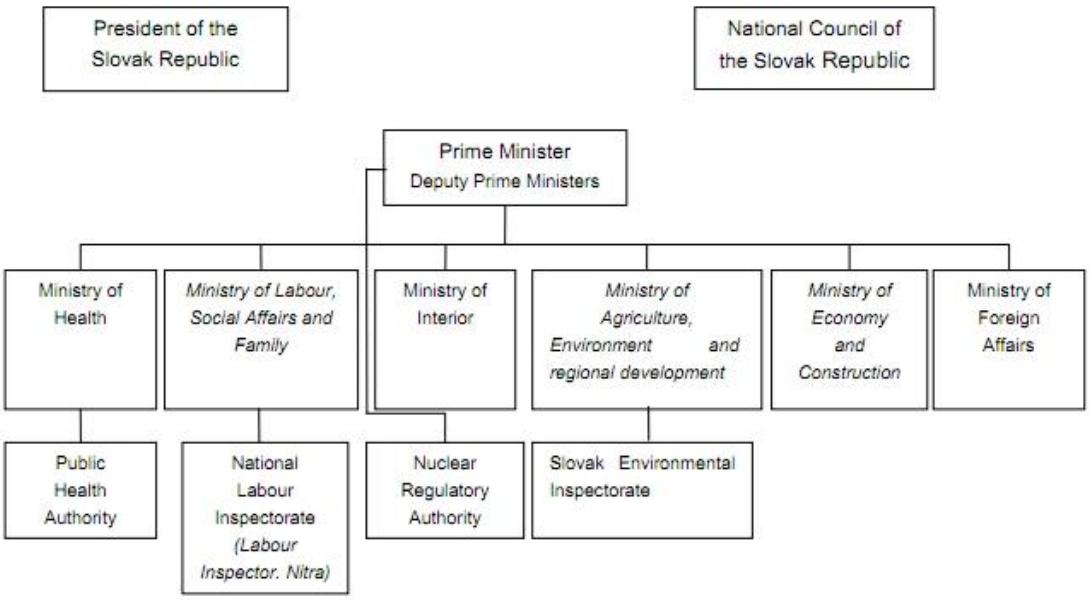

Fig. No. 2 Structure of regulatory bodies

3.1.2 LICENSING PROCESS

The licensing procedure for the nuclear installation consists of five main phases, that is: sitting of the nuclear installation, its construction, commissioning, operation and decommissioning. Before granting an operating license the regulatory body performs inspections according to the approved schedule of program of individual phases of commissioning the nuclear installation (tests, fuel loading, physical start up, energy start up, trial operation).

The basic condition for authorization granting is the elaboration and submission of safety documentation listed in annexes of the Atomic Act necessary for issuance of particular types of decisions and meeting of legislative requirements for nuclear safety. An essential criteria is also the fulfillment of conditions of preceding approval procedures and decisions of regulatory authority.

District construction authority issues decisions on sitting of nuclear installation construction and its decision-making pending the approval of UJD and of other regulatory authorities (Public Health Authority of the SR, labor inspection bodies). Authorization for nuclear installation construction, permission for temporary use of the facility instruction

(including authorization for trial operation) and decision on construction approval (including authorization for operation of nuclear installation) are issued by UJD already as a construction authority. UJD exercises its competency as a construction authority and state administration authority for nuclear safety. Its decisions are based on its own partial decisions (partial approval of safety documentation), as well as on the opinion of relevant regulatory authorities - Public Health Authority of the SR (radiation protection), National Labor Inspectorate, Labor Inspectorate (labor inspection and safety and health protection at work) and other bodies and organizations of state administration (fire prevention, civil defense).

Documentation, attached to the application for issuance of certain decisions of UJD and essential for submission, is listed in annexes No. 1 and 2. of the Atomic Act. Details concerning the scope, content and method of preparation of nuclear installation documentation needed for certain decisions are defined in the UJD Decree No. 58/2006 Coll.

3.2. MAIN NATIONAL LAWS AND REGULATIONS IN NUCLEAR POWER

The most important Act in the area of peaceful use of nuclear power in the Slovak Republic is Act no. 541/2004 Coll. on Peaceful use of nuclear energy (Atomic Act) and on amendment and alterations of several acts

Related Legal Rules

Act No. 575/2001 Coll. on Organization of Governmental Activities and of Central State Administration as amended

Act No. 50/1976 Coll. on Spatial Planning and Construction Order (Construction Act) as amended

Act No. 355/2007 Coll. on Protection, Support and Development of Public Health and on Amendments and Supplements to Certain Acts

Act No. 656/2004 Coll. on Energy and alternations of certain

Act No. 276/2001 Coll. on Regulation in Network Industries and alternations and amendments of certain acts - last amendment by Act No. 107/2007 Coll.

Act No. 238/2006 Coll. on National Nuclear Fund for Decommissioning of Nuclear Facilities and Management of Spent Nuclear Fuel and Radioactive Waste (Act on Nuclear Fund) and alternations and amendments of certain acts as amended

Government Decree 312/2007 Coll. laying down details of the collection and payment of obligatory contributions to the National Nuclear Fund for the decommissioning of nuclear installations and the management of spent fuel and radioactive waste

Act No. 24/2006 Coll. on Environmental Impacts Assessment and alternations and amendments of certain acts as amended

Act No. 145/2010 Coll. on environmental impact assessment and amending some other laws, as amended by later legislation

Act No. 42/1994 Coll. on Civil Protection as amended

Act No. 125/2006 Coll. on Labor Inspection and alternations and amendments of Act No. 82/2005 Coll. on Illegal Work and Illegal Employment and alternations and amendments of certain acts as amended

Act No. 124/2006 Coll. on Safety and Health Protection at Work and alternations and amendments of certain acts as amended

Act No. 264/1999 Coll. On Technical Requirements For Products (Conformity Assessment) as amended (last amendment by Act No. 254/2003 Coll.)

Act No. 90/1998 Coll. on Building Products as amended

Act No. 71/1967 Coll. on Administrative Proceedings (Administrative Code)

Act No. 215/2004 Coll. on protection of classified information and on amendments to certain laws

APPENDIX 1: INTERNATIONAL, MULTILATERAL AND BILATERAL AGREEMENTS Selected Generally Binding Legal Regulations and Safety Guidelines in Relation to Nuclear and Radiation Safety

Multilateral Agreements

- Treaty on Non-Proliferation on Nuclear Weapons
- Statute of the International Atomic Energy Agency
- Agreement between the CSSR and the IAEA for the application of safeguards in connection with Treaty on the non-proliferation of nuclear weapons
- Treaty on the Prohibition of the Emplacement of Nuclear Weapons and Other Weapons of Mass Destruction on the Sea-bed and the Ocean Floor and in the Subsoil Thereof (Seabed Treaty) Treaty Banning Nuclear Weapons Tests in the Atmosphere, in Outer Space and under Water
- Agreement on the Privileges and Immunities of the IAEA
- Convention on Physical Protection of Nuclear Material
- Amendment to the Convention on Physical Protection of Nuclear Material
- Convention on Early Notification of a Nuclear Accident
- Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency
- Vienna Convention on Civil Liability for Nuclear Damage
- Joint Protocol Relating to the Application of the Vienna Convention and the Paris Convention
- Convention on Nuclear Safety
- Revised supplementary agreement concerning the provision of technical assistance by the IAEA to the Government of the SR
- Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management
- Comprehensive Nuclear Test-Ban Treaty
- Convention on EIA in a Transboundary Context (ESPOO)
- Convention on Access Public Participation in Decision-Making and Access to Justice in Environmental Matters (Aarhus)

- Implementation of Article III (1) and (4) of the Treaty on the nonproliferation of nuclear weapons
- Additional implementation of Article III (1) and (4) of the Treaty on the nonproliferation of nuclear weapons
- Dublin declaration

Governmental Bilateral Agreements

- Agreement between the Government of the Slovak Republic and the Government of Hungary on Exchange of Information and Co-operation in the Field of Nuclear Safety and Radiation Protection.

- Agreement between the Government of the Slovak Republic and the Federal Government of Germany on Questions of Common Interest in Connection with Nuclear Safety and Radiation Protection.

- Agreement between the Government of the Slovak Republic and the Government of Austria on Questions of Common Interest in Connection with Nuclear Safety and Radiation Protection.

- Agreement between the Government of the Slovak Republic and the Government of Peoples Republic of Bulgaria on Co-operation in Peaceful Uses of Nuclear Energy.

- Agreement between the Government of the Slovak Republic and the Government of the Czech Republic on Co-operation in the Field of State Supervision of Nuclear Installations and of State Supervision of Nuclear Materials.

- Agreement between the Government of the Slovak Republic and the Government of the Republic of Poland on Early Notification of Nuclear Accidents, on Exchange of Information and Co-operation in the Field of Nuclear Safety and Radiation Protection.

- Agreement between the Government of the Slovak Republic and the Government of Canada for Co-operation in the Peaceful Uses of Nuclear Energy.

- Agreement between the Government of the Slovak Republic, the Government of Ukraine and the Government of the Russian Federation on Co-operation in the Field of Transportation of Nuclear Fuel between the Slovak Republic and the Russian Federation across the Territory of Ukraine

- Agreement between the Government of the Slovak Republic, the Government of the Czech Republic, the Government of the Russian Federation and Cabinet of Ministers of Ukraine on Co-operation in the Field of Transportation of Nuclear Materials between the Czech Republic and the Russian Federation across the Territory of the Slovak Republic and the Territory of Ukraine

- Agreement between the Government of the Slovak Republic and the Cabinet of Ministers of Ukraine on Early Notification of Nuclear Accidents, on Exchange of Information and Co-operation in the Field of Nuclear Safety and Radiation Protection

- Agreement between the Government of the Slovak Republic and the Government of the Republic of Slovenia for the Exchange of Information in the Field of Nuclear Safety

Bilateral Agreements with other Regulatory Authorities

- Renewal agreement between the Nuclear Regulatory Commission of the USA and the Nuclear Regulatory Authority of the SR for the exchange of technical information and cooperation in nuclear safety matters
- Agreement between UJD SR and the Nuclear Installations Safety Directorate of the French Republic (DSIN) for exchange of Information and Co-operation in the Regulation of Nuclear Safety
- Administrative Arrangement between the Nuclear Regulatory Authority of the SR and the Atomic Energy Control Board of Canada Pursuant to the Agreement between the Government of Canada and the Government of the Slovak Republic for Co-operation in the field of Peaceful Uses of Nuclear Energy

- Agreement between the Ministry of Economy and the Committee on the Use of Atomic Energy for Peaceful Purposes of the Republic of Bulgaria on Co-operation in the Field of State Supervision of Nuclear Safety in the Peaceful Uses of Nuclear Energy

- Agreement between the Ministry of Economy of the Slovak Republic and Federal Nuclear and Radiation Safety Authority of Russia on Co-operation in the Field of State Supervision of Nuclear Safety in the Peaceful Uses of Nuclear Energy

APPENDIX 2: MAIN ORGANIZATIONS, INSTITUTIONS AND COMPANIES INVOLVED IN NUCLEAR POWER RELATED ACTIVITIES

NATIONAL ATOMIC ENERGY AUTHORITY	
Nuclear Regulatory Authority of the SR (UJD SR) P.O. Box 24 Bajkalská 27 820 07 Bratislava	Tel: +421-2-58 22 11 14 Fax: +421-2-58 22 11 66 web: www. ujd.gov.sk
NATIONAL radiation protection UTHORITY	
Public Health Authoritz of the SR Trnavská 52 826 45 Bratislava	Tel: +421-2-49 284 11 11 web: www.uvzsr.sk
MINISTRIES	
Ministry of the Environment Nám. Ľ.Štúra 1 812 35 Bratislava	Tel: +421-2-59 56 22 22 Fax: +421-2-59-56-2672 web: www.enviro.gov.sk

Ministry of Economy Mierová 19 827 15 Bratislava 212	Tel.: 02/ 4854 7112 Fax.: 02/ 4342 3949 Web: http://www.economy.gov.sk
Ministry of Labour, Social Affairs and Family of the Slovak Republic Špitalska 4,6,8 816 43 Bratislava	Tel.: + 421- 2- 2046- 0000 Web: www.employment.gov.sk
National Labour Inspectorate Masarykova 10 040 01 Košice	tel.: +421-55-7979902 fax: +421-55-7979904 web: www.nip.sk

OTHER NUCLEAR ORGANIZATIONS

Slovak Electric (SE, a.s.) / ENEL Mlynské nivy 47 821 09 Bratislava 2	Tel: +421-2-58 66 11 11 Fax: +421-2-53 41 75 25 web: www.seas.sk
Affiliations: - NPP Bohunice 919 31 Jaslovske Bohunice - NPP Mochovce 93533 Mochovce	Tel: +421- 33-597 1111 Fax: +421- 33-559 1527 Tel: +421-36- 636- 111 Fax: +421- 36- 639- 1120

RESEARCH AND DEVELOPMENT ORGANIZATIONS

VÚJE, a.s. . Okružná 5 918 64 Trnava	Tel: +421-33 599 1356 Fax: +421-33-599 1193 web: www.vuje.sk http://www.vuje.sk/
Research Institute of Welding (VUZ) Račianska 71 832 59 Bratislava	Tel: +421-2-4924 6200 Fax: +421-2-4425 4867
Research Institute of Cables and Insulating Materials (VUKI) Továrenská 16 815 71 Bratislava	Tel: +421-2-5556 1447 Fax: +421-2-5556 1447
Power Equipment Research Institute (VÚEZ) P.O. Box 153 sv. Michala 4 934 01 Levice	Tel: +421-36-6312 055 Fax: +421-36-6313 663
DECOM Bottu 2 917 01 Trnava	Tel: +421-33-5521 074 Fax: +421-33-5521 077 http://www.home.sk/sro/decom
RELKO P.O.Box 95, Racianska 75 830 08 Bratislava	Tel: +421-2-4446 0138 Fax: +421-2-4425 3301 Web: www.relko.sk
AMEC Nuclear Slovakia, s.r.o. 919 31 Jaslovské Bohunice	Tel: +421-33-559 24 31 Fax: +421-33-534 29 51 Web: www.amec.sk
Institute of Radioecology Horný Bankov 16 040 00 Kosice	Tel: +421-55-6323 537 Fax: +421-55-6223 764
UNIVERSITIES	

Slovak Technical University (STU) Vazovova 5 812 43Bratislava	Tel: +421-2- 57 29 41 11 Fax: +421-2-57 29 45 37 Web: www.stuba.sk
Faculty of Electric-Technology & Information (FEI) Ilkovičová 3 812 19 Bratislava 1	Tel: +421-2-60 29 11 11 Fax: +421-2-65 42 24 15 web: www.upjs.sk
Faculty of Chemical Technology (ChTF) Radlinského 9 812 37 Bratislava	Tel: +421-2-52 49 63 84 Fax: +421-2-52 49 53 81 web: www.fchpt.stuba.sk
Comenius University Bratislava	
Faculty of Mathematics, Physics and Informatics (FMFI) Mlynska dolina 842 48 Bratislava	Tel: +421-2-602 95 111 Fax: +421-2-654 12 305 web: www.fmph.uniba.sk http://www.uniba.sk/www/fmph.html
Faculty of Natural Sciences Mlynská dolina 842 15 Bratislava	Tel: +421-2-602 96 111 Fax: +421-2-654 29 064 web: www.fns.uniba.sk http://www.uniba.sk/www/index-e.html
P.J. Safarik University Šrobárova 2 041 80 Košice	Tel: +421-55 234 11 00 Fax: +421-55 678 69 59 web: www.upjs.sk
OTHER ORGANIZATIONS	
Institute of Physics Slovak Academy of Sciences (SAV) Štefánikova 49 814 38 Bratislava	Tel: +421-2-575 10 111 Fax: +421-2-575 10 608 web: www.sav.sk http://www.nic.savbar.sk/sav/inst/fyzi/intro.html
Hospital - Oncology Institute of St. Elizabeth (OUSA) Heydukova 10 812 50 Bratislava	Tel: +421-2-575 10 111 web: www.ousa.sk

Slovak Metrological Institute Karloveska 63 842 55 Bratislava 4	Tel: +421-2-60 294 492 Fax: +421-2-654 29 592 Web: www.smu.sk