P.1 – PROPOSAL Ministry of Environment of the Slovak Republic final standpoint

NUCLEAR POWER PLANT VVER 4 X 440 MW – THE 3rd CONSTRUCTION

Proposal – Final standpoint

Issued by Ministry of Environment of the SR pursuant to Act No. 24/2006 Coll. on Environmental Impact Assessment and Supplements to Certain Acts

I. BASIC INFORMATION ON PROPONENT

1. NAME

Slovenské elektrárne, a.s., Bratislava

Plant 3rd and 4th Units of the Nuclear Power Plants Mochovce

2. IDENTIFICATION CODE

OIN – 35829052

3. LOCATION

935 39 Mochovce

II. BASIC INFORMATION ON PROPOSED ACTIVITY

1. NAME

Nuclear Power Plant VVER 4 x 440 MW the 3rd constructions

2. PURPOSE

The purpose of the investment project is commissioning and operation of 2 units MO34 of power capacity 2 x 440 MW that are being built within the Mochovce Nuclear Power Plant area, by means of existing licenses utilization, with the aim to produce electric energy necessary to meet demands of particular consumers.

By means of new components installing (turbines and other equipment) in the secondary circuit MO34 of each unit, higher power capacity will be reached and higher efficiency will be increased by 33.9 % without any modification of the primary circuit. Moreover, thermal influences on environment will decrease by 7%, nuclear fuel lifetime will be increased and production of radioactive wastes and effluents will be decreased.

Proposed activity is in compliance with the Energy conception of the Slovak Republic.

3. BENEFICIARY

Slovenské elektrárne, a.s., Bratislava

Units 3 and 4 of the Nuclear Power Plant Mochovce, 935 39 Mochovce.

4. LOCATION

The area of the Nuclear Power Plant Mochovce is situated at the South-west margin of Kozmálovské Hills, mostly in the Hronská Upland. Altitude of the area is 200 - 250 m. MO34 is situated in a common area together with the operation power plant EMO12. Geographic coordinates of the MO34 protected zone midpoint are following:

- terrestrial longitude 18° 27´ 35´´
- geographical latitude 48° 15´ 35´´

From the territorial point of view the MO34 area is situated in the eastern part of the Nitra region, in the northwestern corner of Levice district, nearby boundaries of Nitra and Zlaté Moravce districts, in the territory of Nový Tekov and Kalná nad Hronom villages.

The current status of EMO allotments is given in the land holders certificate no. 103 of Kalná nad Hronom village and no. 242 of Nový Tekov village; updated versions are available at the registrar office web page www.katasterportal.sk.

5. SCHEDULE OF COMMENCEMENT AND COMPLETION OF BUILDING AND OPERATION OF PROPOSED ACTIVITY

Commencement of building	1986		
Completion of building	February 2012 (Unit 3)	–	June 2012 (Unit 4)
Commissioning	November 2012 (Unit 3)	–	June 2013 (Unit 4)
Assumed operation termination	November 2052 (Unit 3)	–	June 2053 (Unit 4)

6. BRIEF DESCRIPTION OF TECHNICAL AND TECHNOLOGICAL SOLUTION

According to the initial design documentation the Nuclear Power Plant Mochovce should consist of 4 units equipped with water pressurized reactors of the Russian origin type 440-213. Commencement of the units 3 and 4 should follow completion of the units 1 and 2 and existing subsidiary systems that are shared by all 4 reactor units. EMO12 has been commercially operated since 1998 (Unit 1) and 1999 (Unit 2).

Construction of the units 3 and 4 started in 1986 by erecting main buildings basements (a reactor hall, an electrical equipment hall, basis for transformers, cooling towers and a ventilation stack) and it was carried on until 1992. In 1992 the construction was terminated. In 1992-2000 maintenance and preservation works of unused installations and components as well as other constructions were performed. These works were done by initial contractors and designers. From 2000 to 2009 on the basis of the programmes approved by the Nuclear Regulatory Authority of the SR preservation and protection works were performed.

Current status of the Mochovce power plant units 3 and 4 construction is following:

- Structural part is about 70 % complete,
- Technological part is about 30% complete,
- Electric installations and control system equipments are almost complete.

Completed constructions and components delivered to the Mochovce site were inspected and/or tested properly. The process of testing started by verification of compliance with new principal project requirements and later on the technical inspections and documentation completeness and original certification of a producer and/or contractor were performed.

The aim of this process is to assure that achievement of a high level of MO34 safety, which is a primary goal of the completion project, will not be influenced by utilization of existing (already supplied) components and/or constructions. All activities related to the MO34 construction are governed by decisions of the NRA SR no. 246/2008 (a construction modification permission of the „Nuclear Power Plant Mochovce VVER 4x440 MW 3rd construction" prior to completion), no. 266/2008 (a permission on accomplishment changes of selected installations having influence on nuclear safety of the units 3 and 4 of the Mochovce power plant

during construction in a scope given in a Basic design documentation and no. 267/2008 (a permission on accomplishment changes in the document „Preliminary safety report of the units 3 and 4 of the Mochovce power plant in a submitted scope). The MO23 completion approach is in compliance with the technical document IAEA (Management of delayed nuclear power plant projects, IAEA-TECDOC-1110, IAEA, Vienna, 1999).

Within ongoing completion activities the structures of the primary circuit were repaired, a roof over the reactor hall was replaced as well as components and those installations which were not in accordance with new requirements and standards were refused by contractors by December 2009.

The units 3 and 4 of the power plant MO34 represent two independently operated units that will contain autonomous nuclear and conventional parts. Both units of MO34 will be connected to the two units of EMO12. However, subsidiary operating systems can be utilized within all 4 units.

The process of electric energy production in the nuclear power plant Mochovce includes three main transmissions of heat:

1. within the first cycle the heat gained from the fuel is used to produce steam: this part of the power plant is called the primary circuit,
2. within the second cycle the steam will drive turbines that are connected with generators producing electricity: this part of the power plant is called the secondary circuit,
3. within the third cycle remaining energy of steam is removed by means of cooling: this part of the plant is called the circuit of cooling water (or the circuit of heat removal).

The primary circuit of each unit is situated a the reactor hall. The primary circuit consists of a reactor and six cooling loops. Each loop consists of a hot line with a main gate valve, a steam generator, a cold line with a main circulation pump and a main gate valve. Main circulation pumps assure coolant circulation through the reactor in order to remove heat from the reactor core. A volume compensator creates and keeps pressure in the reactor cooling system within operational limits and simultaneously enables compensation of changes in water volume during an operation. Steam generators create an interconnection between a nuclear system (the primary circuit) and a steam system (the secondary circuit). Steam generators consist of pipe heat-exchangers that are horizontally structured. Fuel assemblies are situated inside the reactor, where chemically treated (demineralized) water flows through channels of the fuel assemblies to remove the heat produced by nuclear fission. The average temperature of output cooling water is 297°C (the temperature increases by 29°C while flowing through the reactor).

The secondary circuit makes a connection between a steam production and a system of energy conversion. The steam produced by the six steam generators is piped by six high-pressure steam pipe-lines from the reactor hall into a machine hall. The machine hall is shared by all four units and it is oriented in parallel with the reactor halls. There are two turbogenerators per each reactor unit. Each turbogenerator consists of one high-pressure and two low-pressure parts.

Expanded steam condenses in a main turbine condenser, which is cooled by a system of circulating cooling water. Afterwards the condensate returns into the steam generators.

Principle technical data of the 440 MWe unit is given in the following table.

General technical parameters of one unit – the reactor type VVER 440

GENERAL	
Number of operating units: 2	Reactor's electric output: 440 MWe
Reactor type: VVER 440/V-213 (pressurized water)	Own consumption: 35 MW (8% of electric output)
Thermal output of the reactor: 1 375 MWt	Efficiency: 29,5%
Pressurized reactor vessel	**Steam generator**
Inside diameter: 3 542 mm	6 pcs per unit
Wall thickness: 140 + 9 mm	Type: PGV-213
Height: 11 805 mm	Steam production: 450 t/h
Weight (without internal components): 215 150 kg	Output steam pressure: 4,64 MPa
Material: carbon low-alloyed steel Cr-Mo-V	Output steam temperature: 267 °C
	Temperature of feeding water: 158÷223 °C
Reactor core	**Turbo generator**
Number of fuel assemblies: 312	2 pcs per unit
Number of regulation assemblies: 37	Type: 220 MWe
Nuclear fuel weight (UO2): 42 t	Parts: 1 high-pressure, 2 low-pressure
Standard type of fuel enrichment (first loading): 3.6%, 2.4% and 1.6% depending on a position in the reactor core	Revolutions: 3,000 rev/min
Profiled type of fuel enrichment (intended for next loadings of MO34): 4.87% on average for the fuel containing gadolinium	Output voltage: 15.75 kV
Primary circuit	**Condenser**
Number of cooling loops: 6	Coolant flow: 35,000 m^3/h
Coolant flow: 42,600 m^3/h	Max. temperature of cooling water: 33°C
Steam pressure: 12.26 MPa_{rel}	
Temperature of output cooling water: 297.3 °C	
Temperature of input cooling water: 267.9 °C	
Total volume: 250 m^3	
EMERGENCY SYSTEMS	
PASSIVE	**ACTIVE**
Hydroaccumulators (4x)	**High-pressure system (3x)**
Total volume: 60 m^3	Pump capacity: 65 m^3/h
Volume of water: 40 m^3	Output pressure: 13.5 MPa
Volume of nitrogen: 20 m^3	**Low-pressure system (3x)**
Barbotage tank	Pump capacity: 800 m^3/h
Total barbotage tank volume: 13,800 m^3	Output pressure: 0.72 MPa
Volume of 4 traping chambers: 16,140 m^3	**Dripping cooling system**
Volume of 12 barbotage tanks: 1,380 m^3	Pump capacity: 380-520 m^3/h

Efficiency increasing of EMO 34 units

By means of new components installation (turbines and other technology elements) within the secondary circuit of each MO 34 unit higher electric power will be reached (and the efficiency will increase from initial 31.7 % up to 33.9%) without any modifications of the primary circuit. Nominal thermal output of the reactor (1,375 MWt) will remain original, but the total electric output will be 471 MWe (original electric output without modifications of the secondary circuit was 436 MWe)."

The most important improvements and their environmental benefits are following:

- a new turbine of higher efficiency (resulting in decrease of heat discharged into environment due to decreased thermal output dispersed within the condenser),
- new titanium tubes in the condensator (resulting in higher efficiency of this installation),
- a new system of water spraying in cooling towers with natural circulation (resulting in higher thermal efficiency of this installation),
- a new water drops collector in cooling towers with natural circulation (resulting in decrease of water consumption)

The total reduction of thermal discharge (by app. 7%) into environment may be assumed as a percentage of initial efficiency increasing (29.5%). Moreover, efficiency increasing of NPP (when producing comparable amount of electricity):

- extends life-time of nuclear fuel,
- decreases production of radioactive wastes,
- decreases amount of radioactive effluents.

6.1. MAIN COMPONENTS DESCRIPTION

6.1.1. Primary circuit

The primary circuit consists of a reactor, a cooling system of the reactor and a multiple subsidiary and safety systems.

The heat is produced by means of fission of uranic nucleus in fuel, which is in a form of uranium oxide. A moderator of neutrons for a fission reaction is demineralized water with dissolved boric acid. This water is used as a primary coolant as well.

Nuclear fuel is situated in the reactor core inside a reactor pressure vessel. Cooling water flows through the reactor core, removes the heat from the surface of fuel rods and thus keeps stable temperature in the centre of fuel (when full-load output) at 1,200°C.

A nuclear fission reaction is controlled by shifting of regulation assemblies into the reactor core and changing of boric acid concentration in the reactor coolant.

The cooling system is devoted to the heat removal from the reactor core. The reactor core is situated inside a steel pressurized vessel equipped with stainless steel lining. Coolant of the reactor flows through the reactor core, removes heat from fuel and afterwards moves into one of the six main cooling loops (the primary circuit). The temperature of the reactor coolant (chemically treated water) is app. 297°C. To avoid its boiling, the water is kept under pressure of 12.26 MPa by means of a volume compensator, which is connected to one of the cooling loops.

Heated coolant from the primary circuit flows into heat transfer tubes of a steam generator. These tubes are surrounded by water of the secondary circuit, which is heated and thus steam is produced. This way the heat is removed from the primary circuit into a system of energy conversion (the secondary circuit) without

mixing of both liquids. Afterwards, the coolant of the primary circuit returns into the reactor core by force of main circulating pumps.

The purpose of subsidiary and emergency systems of the primary circuit is to assure a safe reactor shutdown and keep the reactor in this status anytime when needed as well as keep the fuel cold and unfaulted. Subsidiary and emergency systems comprise: a feeding system and a boric acid regulation system, a system of residual heat removal, a system of emergency cooling of the reactor core, a subsidiary system of feeding and systems of components cooling.

6.1.2. System of energy conversion

The system of energy conversion consists of several water and steam systems and two steam turbines for each reactor unit. Demineralized water (water of the secondary circuit) is pumped from turbine condensers into steam generators where it is conducted around tubes cooled by the coolant from inside. The heat transferred through the tube walls makes water of the secondary circuit boil. Thus produced steam has the temperature around 260 °C and pressure app. 4.6 MPa. This steam is collected in the main steam collector.

Steam from the main steam collector flows through pipelines into turbines where it gives off app. 1/3 of its energy in order to rotate the turbine and connected electric generators. A part of produced energy is utilized for installation and remaining electricity goes to the grid. Afterwards steam condensates in turbine condensers that are cooled by circulating cooling water. Here it gives off remaining 2/3 of its obtained energy.

6.1.3. Electric systems

Each steam turbine generator produces electricity of voltage 15.75 kV. Power transmission is provided by means of connection of the generator with a main transformer (15.75/420 kV). Output power of each of the units 3 and 4 is transmitted by an independent outdoor electric line 400 kV into the distribution point Veľký Ďur.

Under standard conditions own consumption of each unit is provided by means of two transformers (15.75/6.3 kV) that are connected to an independent bus by a high-voltage side and to 6.3 kV buses of the power plant electricity distribution system by a low-voltage side.

In case of an emergency situation of 400 kV grid and non-regulating of turbogenerators for an own consumption, electricity is provided by the reserve electric power supply 110 kV. Two lines 110 kV make a connection with the distribution point Veľký Ďur. Each unit is equipped with one subsidiary transformer 110 kV/6.3 kV with two secondary windings connected to buses 6 kV of the power plant electricity distribution system.

Reserve 6 kV branches are connected so that the systems of one unit could be power supplied from other power plant units.

Some of 6 kV branches are designated to electric power supply of significant and safety systems. These branches may be power supplied by local 3.5 MVA emergency diesel generators.

Batteries and current inverters are utilized to provide power supply for the 1st category systems (important systems).

6.1.4. Instrumentation and its operation

MO34 will use most of up-to-date commercially available technology. Digital electronic technology is characterized by increased performance, reliability and reduced maintenance demands. MO34 will utilize the best operational lessons learned from Slovak as well as foreign nuclear power plants.

Modern interface man-machine will improve the reaction of an operator in any situation at the power station. Expert systems will be utilized to make diagnostics of the status of a unit. The operator will have an available system of a safety parameters presentation by means of reserved interface, so that all significant information to control the reactor unit is available, also under conditions of most improbable accidents.

6.1.5. Cooling systems

In order to reduce heat dispersion into the Hron river, a closed circulating system of cooling water is used, where heat transfer takes place in cooling towers with natural circulation. Heated water from condensers flows into the cooling towers. There are four cooling towers per two units. All circulation cooling water pumps to cool down are situated in a common pump station. A steam condenser system of the secondary circuit is cooled down by a heat take-off circuit, which contains treated water. The water is drawn from the dam on the Hron river nearby Veľké Kozmálovce, which distance from Mochovce is app. 5 km.

Fresh water which has to compensate water loss from the cooling circuit due to evaporation and the circuit desludging, flows through the pump station into two reserve tanks, each of the volume of 6,000 m^3. The water flows from the tanks by gravity through two tubes for treatment and then it is used to feed the cooling water circuit.

A system of emergency technical water, which is used for cooling of important installations, is available too. Essential water is cooled by wet cooling towers with forced circulation. There are three systems of essential water supply (200% redundancy).

6.1.6. Seismic stability

The most important buildings and installations of a production process are seismically stable up to the level of maximal calculation earthquake for a given locality (surface acceleration value is 0.15 g). Seismic stability is understood as assuring integrity of the reactor cooling system including a safe shut-down of the reactor and its continuous cooling during and after an earthquake.

6.1.7. Emergency systems

In order to keep the reactor in a safe shut-down status and prevent dispersion of radioactive materials, the following critical safety functions must be fulfilled:

- Subcritical reactor status,
- Cooling down the reactor core,
- Heat removal by final after-cooling,
- Integrity of the reactor cooling system,
- Integrity of the hermetic area,
- Coolant reserves.

Fulfillment of these functions is provided by emergency systems that have to provide required functions even in case of a blackout (an electric power supply failure) or a seismic event. In case of an external electric power supply failure, a diesel generator station (it comprises six machines of 3.5 MVA which means three per unit) shall provide electricity supply. Emergency systems assure protection of the power plant employees and population living nearby against ionizing radiation even if accident situations occur.

For this purpose the electric equipment of emergency systems is power supplied by the sources of the category I (necessary) or the category II (significant) and it is seismically certified. Emergency systems are 200% backed up, which means that each system consists of three equal safety systems, out of which even one is sufficient to assure a required safety function. Main systems relevant from the point of view of the power plant safety under various conditions can be summarized as follows:

- Emergency high-pressure and low-pressure cooling systems of the reactor core including passive cooling systems (tanks with boric acid), these systems belong to the emergency cooling systems of the reactor core, which assures the reactor core cooling down and negative reactivity introducing in case of the primary circuit damage.
- The system of pressure release inside hermetic boxes (a barbotage condenser and a showers system), this system assures a principal function of pressure control after an accident in a security package and assures its integrity.
- The system of emergency residual heat removal, its task is to remove accumulated heat from the reactor core and the primary circuit during the reactor cooling down under normal, transition or emergency status.
- The system of emergency feeding of the steam generators, this system assures water supply for the steam generators in case of a low water level in the secondary circuit.
- The system of essential supply water: the purpose of this system is to assure heat removal from each installation related to safety, under any status of the unit, heat transmission produced during a NPP operation and the heat of radioactive decay from the reactor core in a normal or emergency status.
- A feeding system and boric acid regulation: controls coolant stocks and it is utilized for assuring optimal chemical characteristics of the reactor's coolant, it assures mainly:
  - Coolant delivery to the main circulation pump's fillings,

  - Compensation of non-controlled leakage of the primary circuit and recurrence of controlled leakage into the cooling system of the reactor
  - Correction of the reactor's coolant chemical composition, modifications (increasing, reduction) of boric acid concentration under a standard operation and an emergency situation.
- The system of hydrogen autocatalytic recombination and burning: this system controls concentration of hydrogen within the hermetic zone and other measurements of heavy accidents (hydrogen may be produced in case of an accident by a reaction of water with metals at high temperature).
- The system of reactor shaft flooding, this system assures cooling down of a reactor pressurized vessel in case of a serious accident.
- Fire protection system

Important protective and safety reactor systems are those emergency reactor protections that assure a quick shutdown of the reactor. The aim of the quick reactor shutdown system is to shift regulation assemblies into the reactor core when given conditions occur and thus assure a fast reactor's shutdown.

Reactors of the units 3 and 4 will be also equipped with a protective and control system, which activates automatic protection of AO-3 and AO-4 in order to decrease reactor's thermal output under given conditions.

The conception of two reactor units enables effective fuel and radioactive waste management. Safety characteristics of the power plant are also improved as well as fire protection. There are subsidiary systems nearby the reactor units installed to assure an operation. Besides, there are other installations which provide a high safety level of an NPP operation such as an active subsidiary building, a diesel generator station, a compressor station, a pump station of essential supply water and fire-fighting water.

6.1.8. Total costs

Total project costs are 2,774,848,782 € (on 1 July 2008). All contracts are completed with the principal contractors AREVA, VUJE, ENSECO and ISKE (in January, 2010).

7. SUGGESTED OPTIONS OF THE PROPOSED ACTIVITY

Zero Alternative

The zero alternative is leaving MO34 in the state as it is, not continuing in the construction and simultaneously continuing in the operation of the neighbouring power plant EMO12.

Proposed Alternative

Putting into an operation and the operation of 2 blocks MO34 with an output of 2 x 440 MW that are under construction in the area of the Nuclear power plant Mochovce using existing permits, with the target to generate electricity sufficient to cover the supply of electricity to individual customers. By installing of new components (turbines and other technology parts) in the secondary circuit of each block of MO34 more

power is achieved and efficiency increased by 31.7%, without any change in the primary circuit. In addition, thermal outlets into the environment will be reduced by app. 7%, the lifetime of nuclear fuel will be extended, and production of radioactive wastes and the amount of radioactive outlets will be reduced.

The proposed activity was submitted in the zero alternative and one technical alternative, to what extent the Ministry of Environment abandoned the requirement of the alternative solution (Letter No. 7451/2008-3.4/hp - 3, 4, dated 31 July 2008) on a reasoned request of the applicant (letter No. SE/2008/087 3788 dated 15 July 2008) under § 22 section 7 of Law No. 24/2006 Coll. The proposed activity is consistent with the Energy Concept of the Slovak Republic.

III. DESCRIPTION OF THE COURSE OF ASSESSMENT

1. DEVELOPMENT OF ASSESSMENT REPORTS

On 13 February 2009 Slovenské elektrárne submitted a plan by Law 24/2006 Coll. "Nuclear power plant Mochovce VVER 4 × 440 MW the 3rd Construction" to the Ministry of Environment. The purpose of the forthcoming investment action is to put into service and the operation MO34 using existing permits and to generate electricity sufficient to cover a significant gap between demand and supply options in the Slovak electricity network.

The proposed activity was submitted in the zero alternative and one technical alternative, to what extent the Ministry of Environment abandoned the requirement of the alternative solution (Letter No. 7451/2008-3.4/hp - 3, 4 dated 31 July 2008) on a reasoned request of the applicant (letter No. SE/2008/087 3788 dated 15 July 2008) under § 22 section 7 of Law No. 24/2006 Coll.

The proposed activity meets the criteria according to § 18 section 1 of Law 24/2006 Coll. and it is classified, according to its Annex. 8, to Chapter 2. The energy industry, item no. 4. Nuclear power plants and other facilities with nuclear reactors (except research facilities for the production and conversion of fissile and fertile materials which maximum power does not exceed 1 kW of continuous thermal power), including their decommissioning and disposal, part "A" - without limit, and therefore it is a subject to a mandatory evaluation.

The proposed activities under Annex. 13 of Law No. 24/2006 Coll. also rank in the list of activities subject to a compulsory international assessment in terms of their impact on the environment beyond national borders and are heading to the item No. 2. Thermal power stations and other combustion installations with a heat output of 300 MW or more, also nuclear power stations and other nuclear reactors (except research installations for the production and conversion of fissile and fertile materials which maximum power does not exceed 1 kW of continuous thermal load).

The intention was circulated on 22 September 2009 according to § 23 section 1 of Law 24/2006 Coll. to state an opinion to the concerned institutions, municipalities and it was also available for the public on the website of the Ministry of Environment www.enviroportal.sk for the comments.

Following three days after receipt of project activities the municipalities of the district Levice: Nový Tekov, Starý Tekov, Kalná nad Hronom, Veľký Ďur, Tlmače and Malé Kozmálovce, District Zlaté Moravce: Nemčiňany and District Nitra: Čifáre informed the public according to § 23 section 3 of Law in a usual way for the local area. At the same time the villages reported to the public when and where it is possible to look inside the document, to make extracts therefrom, or to take copies at own expenses. Subsequently, the municipalities announced a possibility of sending written opinions on the proposed project, on official public notice boards located at the municipal offices.

At the same time the Slovak Republic, the country of origin for a cross-border MO34 project appraisal, sent a notice about the proposed activity through the contact points according to Art. III. Espoo Convention to all interested parties that have the state border with the Slovak Republic, i.e. Poland, Ukraine, Hungary, the Czech Republic and the Republic of Austria (Letter No. 1277/2009 - 3.4/hp dated 20 February 2009).

Ukraine was addressed through the contact persons of the parties listed on the official website of the Espoo Convention.

Ministry of Environment in cooperation with a department body, authorizing body and other interested bodies, based on Annex 11 of the Law and taking into account all comments received, including comments from interested parties (Austria, the Czech Republic, Poland and Hungary) as well as lay and professional public on the proposed MO34 plan and after consultation with the complainant, identified scale evaluations, according to § 30 of Law No. 24/2006 Coll. on assessment of environmental impact and amending certain laws (number: 1277/2009 - 3.4/hp dated 29 May 2009).

According to the Ministry of Environment changes resulting from substitution of technology components do not alter the function of systems and equipment, but increase their safety, reliability and durability. Their implementation does not change the scope of activities or installed power. Limits for outlets into the environment also remain unchanged to the values before the change. All project changes are designed according to experience from the construction, commissioning and operation of units of the same type in Slovakia and abroad. Therefore, the Ministry of Environment stated that the completion of the units 3 and 4 of the nuclear power plant Mochovce is not considered as a new activity or a substantial change in the original design. The Ministry of Environment also stipulated that before granting operating licenses for the units 3 and 4 of the nuclear power plant Mochovce, the Nuclear Regulatory Authority of the Slovak Republic will judge the nuclear installation in accordance with Law No. 24/2006 Coll. on the Assessment of environmental impact.

Based on scoping, Annex. 11 EIA Law, but also the Annex Art. II. Espoo Convention, Golder (Europe) EEIG developed a report evaluating the proposed activities for the assessment of environmental impact according to the Law. 24/2006 Coll. "Nuclear power plant Mochovce VVER 4 X 440 MW – 3rd Construction", for Slovenské elektrárne, a.s., in July 2009. The authors of the report are on behalf of Golder (Europe) EEIG Serena Majetta (Principal Investigator), Ing. Vincenzo Gente, Mgr. Olga Pospiechová and Ing. Juraj Pospiech and on behalf of Slovenské elektrárne, a.s. RNDr. Milan Zrubec, RNDr. Pavol Chylý a Ing. Velín Balev.

2. CIRCULATION AND DISCLOSURE OF THE ASSESSMENT REPORT

Impact Assessment Report of the proposed activity "The Mochovce Nuclear Power Plant VVER 4x440 MW, the 3rd Construction" prepared according to § 31 Section 2 and Annex No. 11 and scoping of the proposed activity specified under § 30 of Law No. 24/2006 Coll. and a general comprehensible final summary were sent by the complainant to the Ministry of Environment in Slovak and English version (a widely understandable final summary also in German, Hungarian and Polish) on 31/07/2009. Ministry of Environment commented on the submitted evaluation report on 3 August 2009 and required, according to § 31 Section 5 of the Law 24/2006 Coll., an amendment and incorporation of comments mostly formal in character, and also addition of the Chapter III *Assessment of expected impacts of the proposed activity on the environment, including health and the estimate of their significance* for the effects on soil, flora, fauna and their biotopes, landscape, protected areas and buffer zones, territorial system of the ecological stability, urban complex and land use, cultural and historical monuments, archaeological sites, paleontological sites

and important geological sites; cultural values of intangible nature and spatial effects synthesis of activity in the territory.

Supplemented message was sent by the complainant to the Ministry on 14 August 2009. Consequently, the assessment report and the generally understandable final summary circulated for comments to the participants of the process of the environmental impacts assessment, under the EIA Law it circulated to the governmental entities in the Slovak Republic, considered communities and it was also published on www.enviroportal.sk for the general public for the comments until 25 September 2009.

At the same time the Ministry of Environment, as the country of origin, according to Art. 4 Espoo Convention, sent the Evaluation Report of MO34 (Letter No. 1277/2009-3.4/hp dated 14 August 2009) in paper copy and on CD-ROM in English and Slovak language to the surrounding countries with which Slovakia shares its state border: the Czech Republic, Poland, Ukraine, Hungary and Austria, to the considered points and contact persons under the Espoo Convention. In the letter annexed to the report of the evaluation, Ministry of Environment as the party of origin requested the parties to express whether they wished to participate in a public hearing of the activity MO34 in the Slovak Republic, but also whether they would be under Art. 5 of the Espoo Convention requesting consultations in the process of assessing the environmental impact of the proposed activity across national boundaries, which would be made by a mutual agreement between the party of origin and the party concerned.

To the date of the expression of the MO34 intent assessment process, this in this case was the date of 2 April 2009, the following: Austria, the Czech Republic, Poland and Hungary replied that they would participate in the cross-border assessment in accordance with the terms of the Espoo Convention. The affected party Ukraine did not answer in the time specified in the notice whether it intended to participate in the process of a cross-border evaluation of the environmental impact.

On 29 January 2010 the Ministry of Environment received a request of the Bavarian State Ministry for Environment and Health (Letter No. 91b-U8806.50-2009/5-11 dated 26 January 2010) which, referring to Art. 3. of the Espoo Art. 7 of Directive 85/337/EWG in 97/11/EG version directives, 2003/35/EG and 2009/31/EG, asked the Slovak party for a permission to participate in the assessment of the cross-border project MO34.

3. NEGOTIATION OF THE ASSESSMENT REPORT WITH THE PUBLIC

Public hearing and consultation within the cross-border assessments, which the Slovak Republic as a party of origin completed by the convention with various interested parties following the steps in accordance with the Espoo Convention, took place in the following terms:

1. Public hearing of the proposed activity MO34:–
   - on 18 September 2009 in Bratislava (the lay and the expert public from the Slovak Republic, the Czech Republic, Hungary and Austria were present)
   - on 25 September 2009 in Vienna (the lay and the expert public from the Slovak Republic, the Czech Republic, Hungary and Austria were present)
   - on 12 October 2009 in Esztergom, (the lay and the expert public from the Slovak Republic and Hungary were present).

2. Consultations on the MO34 activity under Art. 5 of the Espoo Convention
   - on 27 October 2009 in Mochovce with Hungarian experts
   - on 24 - 25 November 2009 in Bratislava with Austrian experts and representatives of various counties of Austria,
   - on 21 December 2009 in Uzhhorod with Ukrainian representatives.

3.1. PUBLIC HEARING IN BRATISLAVA

The proposed activity according to § 34 Section 2, 3 and 5 of the Law was discussed with the public at a joint public hearing organized by the complainant and the village of Kalná nad Hronom represented by the mayor and with the consent of all the mayors of considered municipalities.

Invitations to the public hearing for all considered communities and all relevant authorities were sent by registered delivery. The public hearing was held on 18 September 2009 at Bôrik hotel in Bratislava. It was attended by representatives of state bodies, municipalities, complainant and representatives of the NRA SR, professional and lay public from the Slovak Republic, the Czech Republic, Hungary and Austria, non-governmental organizations (Brečtan, Global 2000, Greenpeace, Ekoforum, Energia 2000, Spoločnosť priateľov Slatinky, Strana zelených and Za matku Zem) and media (press and television) were strongly represented.

The delegation of the representatives of the Ministry of Agriculture, Forestry, Environment and Water Management of Austria participated in the public hearing in Bratislava. It was headed by Mr. Günth Liebl, managing director and head of the department of environmental policies, who presented the Austrian attitude - opposition to the use of nuclear energy and ongoing support of the highest safety standards of nuclear safety with an emphasis on Austrian citizens and the protection of their environment.

The following questions resounded at a public hearing on the assessment report MO34:

- technical and nuclear safety of the project (accidents beyond project, inherent risks, the absence of the containment, seismic resistance, sufficient water for cooling for an operation, also in exceptional periods of drought, questioning the quality and safety of the 40-year-old power plant project, etc.),
- questions about finishing the project and its financing (funds spent on the initial construction, maintenance and preservation works and finishing the construction),
- questions about the EIA process (procedural questions to the national EIA legislation, the process of commenting, dates, etc.),
- management of radioactive waste and spent fuel, which occurs during an MO34 NPP operation (warehousing, lack of storage capacity, disposal, halting the project development of a deep geological repository, etc.),
- other issues (meaning of the EIA process if a construction has already been implemented, different language versions of the general understandable report, the evaluation of the health of the population around EMO before and after running EMO12).

The complainant answered individual questions in the order they had been asked. Course of the public hearing was correct, but emotional. Its results can be deduced as follows: Independent organizations and

individual opponents of the nuclear power plant MO34 construction requested an amendment of the impact assessment report, but also a new assessment of environmental impacts. The requested amendment is concerned as a solution of the back-end of a nuclear fuel cycle, especially disposal of all types of radioactive waste and spent nuclear fuel. This is one of the subjects of *The strategy of the back-end of a nuclear fuel cycle*, which was assessed according to § 17 of Law No. 24/2006 Coll. in 2008 and subsequently accepted by the Government of the Slovak Republic [1].

Finally, the public hearing showed that construction of the third and fourth block of the Mochovce nuclear power plant has widespread support of communities from considered areas - the environs of the power plant.

The mayor of the village Kalná nad Hronom in collaboration with the complainant prepared, according to § 34 Section 4 of Law 24/2006 Coll., a record of the public hearing and delivered it to the competent authority.

3.2. PUBLIC HEARING IN VIENNA

With regard to good neighbourly relations and the need of a correct cross-border assessment of Mochovce 34 construction finishing and also with regard to compliance with the Espoo Convention and the Bilateral Agreement between the Government of the Slovak Republic and the Government of Austria, the Slovak Republic and Austria jointly organized a public hearing of the report on assessment on the premises of the Technical University in Vienna on 25 September 2009.

The initiation of the public hearing was accompanied by protests of environmental activists, who in the dozen number gathered in front of Vienna Technical University and they were also present during the public hearing.

Ms. Ulli Sima, Vienna City Councilor for the Environment appeared in opening remarks at the public hearing and she drew attention to the critical points on the particular law of the Austrian participation, the inability to inspect the units 3 and 4 EA Mochovce, security issues (in particular, seismic risk, resistance to plane crash, etc.), EIA process compliance with the EU rules.

Subsequently, Mr. Nikolaus Berlakovich, Minister of the Ministry of Agriculture, Forestry, Environment and Water Management of Austria, talked to the participants. He reminded that many issues of nuclear energy use had not been resolved, particularly the deep geological repository. He expects to ensure maximum safety for the population and that all issues will be discussed and answered satisfactorily.

Ing. Jaroslav Jaduš, State Secretary of the Ministry of Environment of the Slovak Republic appeared on behalf of the Slovak Republic. He said that he was coming as a representative of a state which respects the protection of human health and environment, and also observed the environmental policy of the Republic of Austria. He encouraged openness and transparency in the process of assessment of activities. He expressed his opinion that all questions would be answered and the good relations between Austria and Slovakia would be strengthened.

[1] Currently, the Trustee Council of the National Nuclear Fund of the Slovak Republic is preparing the update of the Strategy of Nuclear Energy Back-End

Further discussion on the MO34 evaluation report resumed in the expert line in terms of procedurality of the Espoo Convention and bilateral agreement.

Mr. Christian Baumgartner, Deputy Ministry of Agriculture, Forestry, Environment and Water Management of Austria and the EIA contact person took charge to moderate the public hearing. He gave the floor to the representative of the Slovak Republic, Mgr. Daniela Žižková, who briefly described the ongoing assessment process of the construction in accordance with the national and European legislation.

Consequently, construction implementers (complainant) Slovenské elektrárne, a.s. briefly presented the project of NPP MO34 (Giancarlo Aquilanti - Project Director SE, a.s. MO34).

Ing Jozef Mišák (an expert) stated the improved safety aspects of the VVER 440 reactor, which corresponds to the IAEA standards. He explained the functions of primary, secondary containment and a bubbler system with containment walls 1.5 m thick and with 2.5 bar designed pressure.

Fernando Romano (a responsible person for radiation protection and environment in the nuclear-technical section of ENEL) stated the main results of the evaluation report, which showed no relevant changes in the environment after the implementation of the proposed activity compared with the current situation. Environmental monitoring is carried out within a radius of 20 km.

A discussion followed and the following issues were discussed:

- insufficiently completed containment (shelter of the reactor),
- seismic safety,
- consequences of aging preserved pieces of equipment,
- impact of aircraft in bad faith,
- lack of fire protection of the power plant,
- insufficient safety reserves of a bubbler condenser,
- problematic arrangement of electrical wiring in the design project of NPP VVER-440/213,
- unsolved issues relating to radioactive waste treatment,
- consistency of Law. 24/2006 Coll. with Art. 10 a) Directives. 85/337/EHS on the assessment of the effects of certain public and private projects on the environment, as amended, and regulations and provision of the Aarhus Convention on an access to justice for NGOs. (the Slovak side answered to this question in a spirit that this art. of the Directive. 85/337/EEC is now aligned with Law No. 24/2006 Coll.).

The complainant responded extensively to all questions from the public and NGOs, including organizations from Slovakia.

The public hearing took place in a constructive spirit, although speakers did not always share the same opinion from the political consistency, localization, technical, security, economic and environmental point of view.

There was a protocol completed from the hearing and it was forwarded to the Slovak side.

3.3. PUBLIC HEARING IN ESZTERGOM

On 12 October 2009 in Esztergom a public hearing about the "Mochovce Nuclear Power Plant VVER 4 x 440MW 3rd Construction" took place, which is assessed in the Slovak Republic before entry into service and operation of nuclear facilities, which is authorized under separate legislation.

Introduction of the public hearing was accompanied by protests of environmental activists who were, not in large numbers, gathered in front of the synagogue, where the ongoing public hearing took place, and they were also present during the entire course of the hearing. Mr. Mihály Ivanov, Chairman of the Environment of the City Esztergom welcomed all the present participants at the public hearing and he led the entire discussion. Dr. Bálint Dobi, Head of Environment, Ministry of Environment and Water Management, Hungary spoke on behalf of the Republic of Hungary, and described the reason for the meeting at the public hearing.

Ing. Helena Ponecová, State Advisor of the Ministry of Environment of the Slovak Republic, Department for evaluation and assessment of environmental impact appeared on behalf of the Slovak Republic. She presented the assessment process of the environmental impact of the proposed activities in relation to national legislation, European directives, the Espoo Convention and Aarhus Convention. She emphasized that the topics on the public hearing are discussed on the grounds that the professional and general public is aware of the activity in the same way as the Slovak public.

Subsequently the presentation of Slovenské elektrárne project followed:

- General introduction (Iginla Chellini, Project Director MO34).
- Brief facts about the project (Štefan Rohár, expert).
- Results of environmental impact assessment (Fernando Romano, Golder Associates – processor of the evaluation report).
- Short film about the proposed project.

All participants had an opportunity to join the discussion in writing. The problems were discussed in the following lines:

- impacts of proposed activities for the Republic of Hungary, with an emphasis on the range of 60 km around the plant in terms of their impact on the environment of the area and public health,
- seismic safety issues,
- containment (shelter of the reactor),
- consequences of the power plant components aging process,
- possible consequences of the aircraft impact,
- unsolved issues relating to the radioactive waste management.

All questions were answered by individual specialists and experts of the complainant.

The public hearing took place in a constructive spirit, although the speakers did not always reach the consistency of opinion from the localization, technical, security, economic and environmental point of view.

4. CONSULTATIONS WITHIN THE CROSS-BORDER ASSESSMENT

4.1. CONSULTATIONS WITH UKRAINE

The Slovak Republic as the country of origin for the cross-border MO34 project assessment, sent a notice through the contact points under Art. 3 of the Espoo Convention about the project to all concerned parties which the Slovak Republic shares the border with. The letter with attachments contained all the necessary information according to Art. 3 of the Espoo Convention in Slovak and English language in paper copy and on an electronic data carrier.

The concerned party Ukraine did not respond by the deadline of 2 April 2009 mentioned in the notice whether it intended to participate in the process of the cross-border evaluation of the environmental impact.

Within the scope of the assessment issued on 29 May 2009 the Ministry of Environment took the received comments and the recommendations of the parties - Austria, the Czech Republic, Poland and Hungary into account (Ukrainian party did not send any).

On 17 June 2009 the Minister of Environment of the Slovak Republic received a letter from the Minister of Environment of Ukraine, including a request to serve a notice on the considered MO34 activity. The Ministry of Environment responded to the letter on 24 June 2009 and pledged to integrate Ukraine in the assessment process during the next steps in the assessment under the EIA Act and under the Espoo Convention, despite the fact that the Ukrainian party was behind the schedule.

Ministry of Environment sent a report on the MO34 evaluation (Letter No. 1277/2009-3.4/hp dated 14 October 2009) in paper copy and on CD-ROM in English and Slovak language to the concerned parties, including Ukraine. Ministry of Environment, in an accompanying letter, requested the parties to express whether they wished to participate in the public discussion of the activity MO34 in the Slovak Republic, and also whether they would, under Art. 5 of the Espoo Convention, request consultations in the process of assessing environmental impact.

Ministry of Environment received the return on 25 August 2009 - Notice of service, according to which Ukraine was considered as a concerned party which was actively involved in the process of cross-border assessments. Despite the fact Ukraine once again did not respond to the message or the accompanying letter with the proposal for a public participation in discussion and consultation.

On 19 November 2009 the Minister of the Environment of the Slovak Republic received a letter from the Minister of the Environment of Ukraine with a request to serve notice on the MO34 activity under consideration, although Ukraine had received a report on assessment of MO34 activity that fully respected the requirements of notification, thus it matched all issues required in the notice. Ministry of the Environment considered this request to be unfounded.

Ministry of the Environment, in response to that letter on 09 December 2009 informed Ukraine that the process of assessing the proposed activity MO34 had reached a stage when a team of experts was designated, under § 36 of the EIA Law, to evaluate the whole assessment process in an expert study. Ukraine was advised that the entire assessment process in the Slovak Republic was time limited by national legislation. Nevertheless, the Slovak party again granted an interest to provide all available information to

the Ukrainian side in remaining time until the end of the process. Slovak experts were ready to consult with the Ukrainian experts, in case of Ukrainian interest, by the deadline of 21 December 2009.

Consultations were held on 21 December 2009, based on an intervention of the Ambassador of Slovakia in Ukraine at the office of the Ukrainian Minister of the Environment.

The meeting resulted in stalemate. Ukraine from 25 August 2009, when received a report on the evaluation did not inform the public about the proposed activity and had no comment on the activity, while the Ukrainian attitude was not announced to the Slovak Republic by any way. The Slovak Republic disagreed that the assessment process should have been returned at the beginning due to inactivity and current Ukraine directive attitude, to Art 2.-7. of Espoo convention due to the fact the Slovak Republic did not communicate with Ukraine in above-standard way (diplomatic post), or did not send an announcement, however it did.

On 28 December 2009 Ministry of Environment of the SR sent (Letter No.2177/2009-3,4/hp) a detailed statement on the course of the whole process of consultations with Ukraine to President of the Implementation Committee of the Convention in Geneva, Mr. Mathias Sauer, about assessment of environmental impacts in a transboundary context.

4.2. CONSULTATION WITH HUNGARY

Ministry of Environment and Water Management of Republic of Hungary confirmed interest of Hungary to participate in the process of assessment of the transboundary environmental impact in accordance with Espoo convention.

According to Art. 4 Espoo convention, Ministry of Environment and Water Management accepted the EIA documentation on 25 August 2009. The documentation contained an evaluation report with an attachment in Slovak and English language as well as a summary in Hungarian, Slovak and English language, in a printed version and on CD-ROM. On 12 October 2009 the delivered documentation was published.

Under Art. 3.8 and Art. 4.2 of the Espoo Convention, the Slovak and Hungarian parties agreed, that the public hearing about the evaluation report of the suggested action would take place in Esztergom on 12 October 2009. The public hearing was attended by representatives and experts from the project proposer's side.

Hungary asked for an expert's discussion to discuss cardinal questions according to Espoo convention. Consequently, the Slovak and Hungarian party discussed proposed dates of the meeting according to the regulations of Art.5 Espoo convention and they agreed to carry out expert consultations in Mochovce on 27 October 2009.

Expert consultations were held in the Mochovce NPP area. Consultations were connected with an inspection of the building site and the unit 3 hermetic zone of a steam generator.

Discussion topics for consultations were sent by Ministry of Environment of the SR to the Hungarian party via email on 19 October 2009:

- analytical results of seismicity in the Mochovce area,
- extension of the monitoring network and the possibility of a cooperation with Hungarian experts,

- results of analysis carried out on the Hungarian side in the range of 60 km, which is probably the area affected by the negative environmental impacts,
- expected lifetime of the NPP Mochovce units 3 and 4,
- actual capacity / performance of the units today and the after future improvements,
- protection against external injuries, including earthquakes and a deliberate air crash,
- results of detailed analysis of severe accidents.

Many Hungarian questions and comments were satisfactorily answered during the consultation. The Hungarian side was of the viewpoint that for the decision-making process it is important to provide written answers to some questions of experts, which will complement other information that had not been available before the meeting.

The parties agreed that by this bilateral meeting the oral phase of the cross-border consultations according to Art. 5 of the Espoo Convention was closed. The claimant should collect and send required answers (in a written and an electronic form, in Slovak and English language) by the Ministry of Environment of the Slovak Republic to the Ministry of Environment and Water in Hungary till 12 November 2009. After receiving the responses, the Hungarian party will prepare an official standpoint of Hungary regarding the proposed project and they will send it to the Ministry of Environment of the Slovak Republic till 7 December 2009. Consultation minutes were prepared and signed in two copies from consultation.

The end of consultations with the Hungarian side was the viewpoint of the Hungarian Ministry of Environment and Water, regarding the impact on environment of the building of two new blocks NPP Mochovce dated on 18 December 2009 (letter No. KMF-70/2009), in which the Hungarian side:

- noted the similarity of the effects, mainly blocks EMO12 with Paks NPP,
- stated that they accepted the calculated dose in the Slovakia-Hungary border area, which seems to be insignificant, also took into consideration evaluation methods of accident influence within a radius of 2-3 km from the NPP Mochovce,
- noted that according to the literature available and survey of the site during consultations with experts, the scope and findings of micro-seismic monitoring are considered favourable. They also said that a probabilistic safety analysis in relation to an earthquake was not made, that this is not required in the Level 1 requirements, that the conclusions made in the revised seismic risk analysis have been incorporated into the basic project, that their technical dimensions are outside the scope of the impact assessment and therefore they have to be taken into consideration along with the design requirements defined by the competent authorities and relevant regulations,
- informed about the sub-program within the Mochovce RADMAN monitoring program, in which the radioactivity is monitored in the Hungarian territory to a distance of 80 km from the NPP Mochovce and found insignificant emission effects of the blocks MO34 without a possibility to distinguish these from the natural background variability,
- for the air protection area they stated that the population radiation exposure due to gaseous effluent will not be measurable at a distance over 35 km from the source,
- for the area of water protection they stated that emissions of radioactive substances will not have a negative effect on the population, indicated that the total (i.e. including effluent to the air) annual load of an effective dose for critical groups of individuals (people living at the confluence of the Hron and

Danube), was estimated at 4,3 nSv, i.e. that this number is negligible compared with the dose from the natural background,

- stated that the environment impact assessment does not analyze the environmental impacts of cooling water diverted to the river Hron from the point of view of nature and land protection and drew attention to legislatively established natural areas of the national park, special areas Natura 2000 within a radius of 50 km from the plant,
- stated that in relation to the management of emergency situations, the competent Hungarian authorities have an on-line access to information provided by remote monitoring stations and an off-line access to radiological information of the Slovakian Party,
- summarized all the viewpoints, views and concerns of Hungarian concerned municipalities and non-government organizations. Among the communities affected with the highest probability, the district notary Authorities of the municipalities Kemence and Bernecebaráti presented their objections (letters No. 466-2/2009 and 215-2/2009 both dated on 05 October 2009) about the fact that the majority of the villages population lives from agriculture and particularly from fruit cultivation. Hungarian Energy Club and Greenpeace, two of the NGOs in Hungary presented their objections to Hungarian Ministry of Environment in a joint letter dated on 07 October 2009. Their questions and concerns were discussed in detail during an expert consultation and the main findings from these consultations are summarized in the final station,
- stated that the implementation of the proposed activity would bring no public health risks. According to WHO / HFA 2009 data, the standard mortality indicators do not point to a significant increase in the region on the Slovakia-Hungarian border, compared with the data from other regions of Hungary in the period 1992-2005,
- suggested to provide data of 40 monitoring stations, in areas 20 km from the NPP Mochovce, to a Hungarian competent organization, to allow the Hungarian authorities to set up and operate their own radiological measurement stations, at least three within a radius of 30 km from Mochovce and ensure mutual data interchange of aerosol pickers operating in the areas of Austria, Hungary and Slovakia,
- suggested to discuss and implement relevant questions under the Hungary-Slovakia Committee established by the NRA SR and the Hungarian Atomic Energy Authority,
- proposed to ensure continuous monitoring of emissions of radioactive substances in accordance with the aforementioned Hungarian legislation.

The viewpoint stated that the planned construction of the Units 3 and 4 NPP Mochovce is a potential source of potential nuclear risks. Adverse effects of nuclear facilities on the environment are very low during a normal operation and pose a minimal risk for Hungary. However, any change against a normal operation, though with a low probability, may pose a serious risk to Hungary and this risk must be reduced and controlled.

Furthermore, the viewpoint in the evaluation report itself on the assessment of the environmental impact stated that it does not entirely fulfill scientific and technical criteria. Despite that it contains all the required particulars, at certain points it does not analyse the issue in detail.

All answers to the questions raised by Hungarian experts during the consultation and also written references sent after the consultation were compelling and suggested that according to the analysis, the effects of a normal power plant operation are negligible to the environment and not exceeding the boundaries.

Based on expert consultations, written references which were sent to the Hungarian side and also from the special literature, it is clear that the report evaluation on the environmental impact was preceded by a survey carried out carefully, partly under the supervision of IAEA. The conclusions incorporated into an interim safety analysis and documentation of the project, which were approved by THE NRA. After further completion of information and documents during professional consultations, the Hungarian party stated that the final conclusions of the impact assessment on environment were acceptable.

4.3. CONSULTATIONS WITH POLAND

General director of environmental protection (the central state administration body responsible for ensuring the participation of Poland in cross-border environmental impact proceedings) progressed the received documentation about the proposed activity without delay to regional directors of environmental protection in Rzeszow, Krakow and Katowice, who are locally relevant in relation to the territory of the possible transboundary environmental impacts (letter No. DOOSsoos-082/2114/974/09/pf dated on 15 September 2009).

After a preliminary analysis of the evaluation report and after obtaining the expertise of relevant state administration bodies, the Polish party did not find any significant circumstances requiring the presence of Poland at the public hearing proposed on 18 September 2009.

In the viewpoint of the general director for Environmental Protection (letter No. DOOSsoos-082/2114/1349/09/pf dated on 30 October 2009) it is also said that based on obtained information, as well as on a formal legal analysis and meritorious range of submitted documentation, as well as the assumptions and concerns of the Polish Party taking into account (letter No. DOOSsoos-82/429/216/09/pf dated 11 May 2009) which in largely measure decided about the Polish accession to the cross-border action, the following is stated:

- investment within a normal operation does not present a significant adverse transboundary impact on the territory of the Poland,
- Based on a report about the evaluation, the radiation safety of Poland will be remained in case of a normal operation as well as in the event of accidents,
- Poland does not present substantive comments and objections with regard to the planned completion and operation of the nuclear power plant,
- 6 remarks to the Polish text of the generally intelligible final summary relative of the storage of spent fuel, disposal of liquid radioactive waste, an issue of obtaining water from the water reservoir Kozmálovce and a special gas treatment system,
- attention to the terminological mistakes leading to a mismatch of information.

On 6-7 October 2009 also a bilateral meeting of the state supervision over nuclear safety in Slovakia and Poland was held, during which the Polish National Atomic Energy Agency received detailed information concerning the issue of nuclear safety and problematic technical issues.

Poland does not wish to participate in cross-border consultations under Art. 5 of the Espoo Convention concerning means of pacification or elimination of the adverse transboundary impact.

4.4. CONSULATATION WITH THE CZECH REPUBLIC

Ministry of Environment of the CR confirmed again, with the same form letters and numbers (letter No. 64267/ENV/09 dated on 15 September 2009, dated on 01 October.2009 and dated on 9 October 2009), assessment report receipt and its distribution to aggrieved territorial municipal entities and aggrieved administrative authorities to exposure and statement. The following viewpoints were in annexes of identical letters, which were sent successively. They did not contain any comments on the proposed activity:

- Městský úřad, Břeclav (letter No. MUBR 63438/2009 dated on 09 September 2009),
- Česká inspekce životního prostředí, Oblastní inspektorát, Ostrava (letter No. ČIŽP/49/IPP0906226.004/09/VMJ dated on 08 September 2009),
- Agentura ochrany přírody a krajiny ČR, Správa CHKO Bílé Karpaty, Luhačovice (letter No. 1539/BK/2009 dated on 08 September 2009),
- Ministerstvo životního prostředí, odbor integrované prevence a IRZ (letter No.1751/760/09 dated 03.09.2009) ,
- Ministerstvo obrany ČR (letter No. 1466-65/2007-2697 dated on 30 September 2009),
- Státní úřad pro jadrovou bezpečnost, (letter No. SÚJB/RCKA/20786/2009 dated on 29 September 2009),
- Krajský úřad Jihomoravského kraje Brno (letter No.JMK 55668/2009 dated on 18 September 2009),
- Městský úřad Uherský Brod (letter No. OŽP/2816/09/So dated on 04 September 2009),
- Městský úřad Vizovice (letter No. MUVIZ 020548/2009/Rd dated on 09 September 2009),
- Městský úřad Vsetín (letter No. MUVS 17206/2009 OŽP dated on 09 September 2009),
- Městský úřad Uherské Hradiště (letter No. OŽP/64012/09 dated on 14 September 2009),
- Krajský úřad Moravskoslezského kraje (letter No. MSK 151196/2009 dated on 29 September 2009),
- Krajská hygienická stanice Moravskoslezského kraje Ostrava (letter No. HOK/OV-8299/215.1.2/09 dated on 11 September 2009),
- Krajská hygienická stanice Jihomoravského kraje Brno (BM/46513/2009/odb.HOK dated on 15 September 2009),
- Česká inspekce životního prostředí, Oblastní inspektorát, Brno (ČIŽP/47/IPP/0900030 006/09/BLV dated on 15 September 2009).

In the above letters, the Ministry further notified that none of the administrations raised any comments. Ministry of Environment of the Czech Republic has requested to be further informed about all steps of the EIA process, including sending of expertise to the proposed activity.

4.5. CONSULTATION WITH AUSTRIA

On 14 August 2009 Ministry of environment of the Slovak Republic sent a report, according to Art 4. Espoo convention and Art. 3 of the bilateral agreement about its realization, an evaluation report on the impacts of

proposed activities on the environment with an application and ensuring public participation in Austria. The report was accompanied with a summary in German.

Complete documentation was publicly exposed by federal governments of all Austrian provinces at the time from mid-September to mid-October 2009. At that time, the authorities and the public had a possibility to comment on the underlying intent.

On 18 September 2009, the public hearing was held in Bratislava, with the participation of representatives of the Austrian Ministry. Austrian public and representatives of the Ministry were invited to a public consultation by letter of the Minister of Environment, Mr. Dušan Čaplovic to the Austrian counterpart Mr. Nikolaus Berlakovich and then on 25 September 2009 a public hearing about the assessment report under Art. 5. § 2 of the bilateral agreement was held in Vienna. A protocol from this discussion was posted to the Slovakian party six weeks later in the Slovak language. For details, see the Part A the public hearing in Vienna in this viewpoint.

By letter dated on 22 October 2009 Austria sent viewpoints of the Austrian public opinion to Slovakia, including the federal states to the assessment report on environmental impacts (total 209,269 viewpoints), together with a professional viewpoint of the Republic of Austria and a request to take them into account during deciding about the intention. At the same time Austria asked for consultations.

The most important remarks were resumed by the Austria side to the following fields:

- a discontinuity problem on a building site, as well as a connection of old and new technologies,
- the project of the reactor doesn't correspond with the current state of the reactor technique,
- missing full pressured containment et hoc hazard of radioactive substances release in case of an accident,
- lack of confronting the so-called potential heavy accidents,
- lack of protection against terrorist attacks - impact of aircraft in bad faith,
- inadequate proven disposal of spent nuclear fuel
- lack of indication and evaluation of possible alternatives to building a nuclear power plant
- lack of access to justice in the Law on Environmental Impact Assessment for the Environment,
- the requirement on financial cover of possible future losses.

On 24 and 25 November, Austrian and Slovak consultations were held in Bratislava under Art. 5 of the Espoo Convention and Art. 6 of a bilateral agreement. These consultations discussed the proposed activity in the viewpoints of Austria, the Slovak party answered all the questions, and a lot of difficult points were clarified. The bilateral consultations found out that some topics require, with respect to their importance, a deeper discussion of the facility security at a technical level. This includes the following topics related to or affecting the issues of VVER nuclear power plants safety:

- seismicity and seismic resistance,
- security package (containment),
- severe accident,
- integrity of the pressure vessel.

In the consultation protocol dated on 25 November 2009, Austrian and Slovak parties agreed on a more detailed discussion of these topics at a professional level in a separate bilateral agreement between Austria and the Slovak Republic about common issues in nuclear energy. The NRA SR invited Austrian experts on a bilateral meeting of experts on the topic "Severe Accidents", which was welcomed by Austria [2]. The meeting was held on 15 December 2009. Similar consultations were held already in 2008 in Austria and then in June 2009 in Banská Štiavnica.

Federal Ministry of Agriculture, Forestry, Environment and Water Management of Austria, in its viewpoint to the result of the consultation (letter No. BMLFUW-UW.1.4.2/0091-V/1/2009 dated on 15 December 2009) sent notes to the Ministry of Environment Slovak Republic, that: " Austria based on the background that the Ministry of Environment of the Slovak Republic will wait to draw up the final statement until clarification of the above mentioned issues in order to take into account the recommendations, which will arise from the consultation of experts. ",

Austria also states that according to information obtained from the Slovakian side during the consultation, an access to the courts will be provided for environmental organizations in the process of evaluating of the environmental impact, even if they have their headquarters abroad. And that they will have the party status in the approval process following the evaluation of environmental impact under the Slovak EIA Act, and a possibility, after exhausting the previous options, to go to the court to review the process of assessing environmental impacts and their taking into account in the approval procedures.

Austria assumes that Slovakia will take all steps in the future, leading to formally clear and explicit anchorage of this law in the Slovak legal system.

This opinion was reaffirmed by the Austrian Embassy in Slovakia in the Aide Memoire to the Minister of Environment of the Slovak Republic dated on 28 January.2010, stating that questions of the Austrian party on the bilateral meeting on the topic "Severe Accidents ", were answered in a way, which can be described as not sufficient because some questions remained unanswered due to absence of a competent expert. Austria is convinced that the questions that remained unanswered on this subject, as well as other issues will be discussed, as agreed, smoothly and with sufficient technical expertise and resolved within the framework of bilateral agreements on exchange of information relating to nuclear safety. Austria once again expressed the wish stated in the letter dated on 15 December 2009 that the Ministry of the Environment authority will wait for a grant final opinion on the impact assessment of the proposed activity until clarification of the above mentioned questions in order to implement any recommendations arising from the consultation of experts.

At the request of the Ministry of Environment, which was mentioned on the deputy consultation at the Ministry of Economy on 26 January 2010, the NRA SR, which was the coordinator and organizer of the above bilateral meeting on the topic "severe accidents", issued a written statement the same day (letter No. . 258/230-31/2010), which says that the organization of the seminar about severe accidents on the land of the NRA SR as well as the planned workshops on other topics referred to it, is carried out based on a separate bilateral agreement with Austria, regarding exclusively nuclear safety and, therefore, according to the NRA SR, it is not possible to consider these and any further workshops on the above issues as the continuation of the EIA process, respectively as a prerequisite for the completion of the entire EIA process.

[2] Letter of NRA SR No. 258/230-31/2010 dated 26.1.2010 addressed to the Ministry of Environment, concerning the bilateral meeting, as well as the position of Austria to consultation, inter alia states that the given issues are related to nuclear safety and not to environmental assessment report and EIA process itself.

Eventually, the Authority expressed the belief that the EIA process should be completed as soon as possible in order not to mix contents of individual processes topics.

With the binding of the final statement release on conclusions of the professional consultation of experts of both parties under a separate agreement in the above stated fields, an executor of the expertise report also did not identify himself with the following reasons:

- The listed issues are related to nuclear safety and security and they are contents of safety documentation, whereby the NRA SR issued the Decisions 246, 266 and 267 in 2008. They will also be contents of following security documentation elaborated for an application for a permit on introduction into an operation and in a particular case.
- Other issues of Austrian specialists, at the seminar about severe accidents, were mainly related to a detailed design solution of some equipment for the project MO34 for management of severe accidents. Detailed questions of the Austrian side are clearly beyond the environmental assessment.

5. VIEWPOINTS, REMARKS AND PROFESSIONAL REPORTS SUBMITTED TO ASSESSMENT REPORT

In the statutory deadline the following written statements were delivered to the Ministry of the Environment pursuant to § 35 of Law No. 24/2006 Coll. on the assessment report:

5.1. VIEWPOINTS OF INTERESTED BODIES AND INSTITUTIONS

Úrad jadrového dozoru SR, the department of systems, components and construction *(letter No. 1948/320-293/2009 dated on 09 September 2009)*

The authority has no substantive comments to the evaluation report. However, it observes that under § 31 of the Law. 24/2006 Coll. a comprehensive finding, description and evaluation of expected impacts of the proposed activity should be referred in the report, including a comparison with the existing state of the environment. It is necessary to fill in missing information in order to meet requirements of this provision according the points a), b) and remove deficiencies according to the point c) of the NRA SR viewpoint (a part of the population impact).

Other substantive and formal comments listed in the viewpoint Annex are also legitimate and should be taken into account.

Úrad verejného zdravotníctva SR – hlavný hygienik *(Letter No. OOZPŽ/6118/2009 dated 27 August 2009)*

In the view of expected social benefits of the proposed activity and expected level of activity on the environment documented in the report, the Authority considers that the proposed activity „Atómová elektráreň Mochovce VVER 4x440 MW, 3. Stavba", can be accepted.

The proponent has taken into account the requirements in the report that the Authority applied in the statement OOZPŽ/2371/2009 dated on 1 March 2009 to the proposed activity intention and incorporated the required data and information in the report.

The Authority further notes that after the MO34 operation starting it will be necessary to continuously redundantly monitor the level of radioactive release from MO34 in all important items, at least at scale of the current monitoring in 12 EMO, and systematically monitor the impact of nuclear facilities complex on radioactivity of environmental components and population doses, including an assessment of population exposure. Any changes to the ambient monitoring program will be considered when licenses are issued for operating the nuclear power plant MO34.

At the same time, the Authority believes: "that the final comprehensive assessment of the expected impacts listed in the report, could be summarized in a survey of residual impact of the operation of the proposed activity to environment which will be a logical and inevitable consequence of the action and it will be created during":

- further management with radioactive waste produced during an operation of the proposed nuclear power plant and its decommissioning,
- further management with produced spent nuclear fuel,
- elimination or recycling of radioactive contaminated materials, which activity is so low that it can be reprocessed or otherwise brought into the environment. "

The remark is correct. These data is not comprehensively summarized and evaluated. It is in different parts of the evaluation report or in the attachment.

Regionálny úrad verejného zdravotníctva Levice *(letter No.D1/2009/02164 dated on 04 September 2009)*

Regionálny úrad has no comments on the proposed project.

Among others it states that monitoring is carried out within a radius of 20 km from the plant. Teledozimetric system is equipped with 40 stations and monitors the gamma radiation dose rate, a volume activity of radioactive iodine and additional information about the state of technology. Monitoring system, for the entire site Mochovce, was designed to include the units 3 and 4 after their activation.

Ministerstvo hospodárstva SR, sekcia energetiky *(letter No.3519/2009-3400 dated on 28 September 2009)*

According to social benefits, the degree of build up, negligible impacts of the proposed activity on the environment and the absence of another rational alternative, the Economy Ministry gave a positive statement on the evaluation report.

Ministerstvo životného prostredia SR, sekcia geológie prírodných zdrojov, Odbor geologického práva a zmluvných vzťahov *(letter No.43297/2009 dated on 21 September 2009)*

Odbor geologického práva a zmluvných vzťahov, has no objections against the assessment report in terms of an overall concept.

However, the department also submitted 4 comments to the Chapter C. II Characteristics of the current state of the environment of the concerned area, which are related to an amendment of Annexes of topographic mapping units, geological and tectonic development of the territory, a lithological composition, a resolution description of the plant itself and surrounding geology, and inaccuracies in describing the geodynamic phenomena, mineral deposits and a seismic activity. "Concerning the amount of uncertainties listed in these chapters, it is advisable to revise the text by a specialist on the given topic."

Ministerstvo životného prostredia SR, sekcia vôd a energetických zdrojov *(letter No.39809/2009 dated on 28 August 2009)*

In the scope of the section of water and energy resources, the Ministry has no substantive comments to the submitted evaluation report on the proposed activity.

Ministerstvo životného prostredia SR, odbor manažmentu environmentálnych rizík *(letter No.39614/2009 dated on 28 August 2009)*

In terms of the scope of the environmental risk management department they have no further comments to the submitted evaluation report.

Ministry stated, that the NPP Mochovce is under Law No. 261/2002 Coll. on prevention of major industrial accidents and on a change and amending certain laws, according a total of selected hazardous substances presented in the company (hydrazinhydrat - Levoxin has a major impact on the categorization for the NPP Mochovce) placed in the category A and it will not reach the threshold level of the category B even in case of doubling the quantity in storage .

Krajský úrad životného prostredia Nitra, Odbor ochrany zložiek životného prostredia *(letter No.2009/00257 dated on 08 September 2009)*

The Authority has no substantive comments to the evaluation report of the proposed activity. In the next stage of approval and authorization, it insists on implementation of measures to prevent, eliminate, minimize and compensate for the effects of proposed activities on the environment proposed in the assessment report.

Slovenská agentúra životného prostredia Banská Bystrica *(Letter No. CZ3139/2009 dated on 11 August 2009)*

The complainant accepted the report comments that the agency applied in the opinion of the proposed activity intention No. CZ1150/2009 dated on 14 April 2009 and incorporated the required data and information in the report. The agency has no further comments on the assessment report and recommends the implementation of the EMO units 3 and 4 with an emphasis on compliance with legislative requirements listed in the Chapter 4.2 - Measures in case of events – accident states.

Nitriansky samosprávny kraj *(Letter No. CZ - MS 24328/2009 - 1941/2009 dated on 11 September 2009)*

Nitriansky samosprávny kraj agrees with the scope of the evaluation report of an environmental impact without any comments.

Krajský pozemkový úrad v Nitre *(Letter No. 2009/00325 dated on 05 November 2009)*

The authority notes that in this case a consent to withdrawal of agricultural land has already been given (MP SR issued under No. 10698/81-PV on 10 December 1981) and the investment does not increase the coverage area of agricultural land and therefore there is no need for a new agreement of KPÚ in Nitra .

Obvodný úrad Nitra, odbor civilnej ochrany a krízového riadenia (*Letter No. A/2009/12542/2 dated on 07 September 2009)*

In terms of civil protection of the population the Authority does not have any comments on the documentation.

Inšpektorát práce Nitra *(Letter No. 5041/38/2009/BOZP dated on 18 September 2009)*

The inspectorate requires in Section 1.0 Project Framework, Chapter 2.8.3 Guidance and implementation of BOZP to finalize the obligations of the employer:

1. minimum safety and health requirements for the workplace by NV SR No. 391/2006 Coll.,
2. minimum requirements for the provision and use of personal protective equipment by NV SR No. 395/2006 Coll.,
3. protection of workers from risks related to exposure from chemical agents at work by NV SR No. 355/2006 Coll.,
4. minimum health and safety requirements to protect workers from risks related to noise exposure by NV SR No. 115/2006 as amended by NV SR No. 555/2006 Coll.,
5. details on the factors of work and working environment in relation to the categorization of work and the terms of the proposal for inclusion of work into categories in terms of risk by NV SR No. 357/2006 Coll.

Obvodný úrad pre cestnú dopravu a pozemné komunikácie v Leviciach *(letter No. U/2009/02301 BC 10, IDE No. U/2009/005122 dated 10.09. 2099)*

The office has no observations to the evaluation report if the following conditions will be kept:

1. During the implementation of supposed activity is needed to respect law No. 135/1961 Coll. about communication over the land (road law) as amendment, treaty No. 35/1984 Coll. and particular STN at incidence to road No. III/51110 and No. III/05149.
2. According § 3 article 2 of law No. 135/1961 Coll. about communication over the land as amendment the local state administration in a field of local communication and tertiary roads is performed by municipality as a transferred state administration.
3. According § 11 article 2 of road law at a works besides built-up areas in a road protection zone of road No. III/51110 and No. III/05149 is required to ask the exemption from activity in road protection zone.

4. There is required to support the positive standpoint of regional road owner Nitriansky samosprávny kraj, governor of regional road Regionálna správa a údržba ciest Levice, a.s. and Okresné riaditeľstvo policajného zboru Levice, Okresného dopravného inšpektorátu.
5. Documentation for spatial and building procedure have to be introduced to the office for appraisal.

Obvodný úrad životného prostredia Levice, odbor ochrany zložiek životného prostredia *(letter No. T2009/01301-002 dated 14.09.2009)*

ObÚŽP Levice as affected authority puts positive standpoint considering the evaluation report and concerning facts mentioned in the standpoints of particular sectors of state administration.

The office requires take into account the observations concerning potential influential facts in the waste management and fulfilment of valid legislation about nature and land conservation at the next level elaboration of design documentation.

Slovenský vodohospodársky podnik, o.z. Banská Bystrica *(letter No. CS 104/2009 – CZ 12881/2009-220, 230 dated 11.09.2009)*

In the standpoint is mentioned that the permit of waste water releasing to river Hron for conditions of EMO 1,2 operation was issued by KÚŽP Nitra IDE No. 2007/00029 dated 25.01.2009 and valid till 31.12.2010. Also there is stated fulfilment of authorized limits in released waters during the years 2004-2008 (in report tab. 54 and 55, page 216 and 217). The tables shows the coincidence of real results with permit value, except value in parameter RL (105°C) in the year 2007. „Finishing of construction MO 3,4 will excessively increase requirements to water supply and also concerning releasing waste water to river Hron to ensure required quality of surface waters under drain mouth of waste waters from site EMO."

The office considers introducing mainly facts mentioned in the standpoint No. CS 34/2009 CZ 4645/2009-230,220 dated 20.3.2009 to intention of supposed activity.

5.2. COMMENTS FROM CONCERNED MUNICIPALITIES AND CITIZENS OF CONCERNED MUNICIPALITIES

Local Authority Nový Tekov (letter No. 505/2009 dated 17 September 2009)

The mayor requires resolving building of a bridge across the river Hron between municipalities Starý Tekov and Nový Tekov, which will serve as an escape route for residents of Nový Tekov in case of accidents.

Local Authority Kalná nad Hronom (letter No. 488/2009 dated 29 September 2009)

The municipality has no fundamental observations to the evaluation report and keeps its statement dated 25 March 2009 in validity. Since in this case it is a completion of facilities construction, the municipality does not oppose the completion of the construction of the units 3 and 4 and supports the implementation plan.

Local Authority Starý Tekov (letter dated 24 September2009)

The citizens of the municipality had no comments on the evaluation report of the proposed activity. The municipality agrees with presented material and does not oppose the implementation of the building.

Local Authority Malé Kozmálovce (letter No. 310/2009 dated 17 September 2009)

The municipality Malé Kozmálovece as well as the municipality public had no comments on the evaluation report of the proposed activity.

Local Authority Veľký Ďúr (letter No. 390/2009 dated 25 September 2009)

Nobody from the municipality had comments on the report in question.

Local Authority Nemčiňany (letter No. 456/2009 dated 24 September 2009)

The local Authority notes the publication of information to the citizens about a possibility of consultation and participation in the EIA report for a public discussion.

Town Tlmače (letter No. 1137/2009 dated 21 September 2009)

The town has no comments, even no written opinion from the people has been delivered to the assessment report.

Local Authority Čifáre

A statement has not been delivered.

Joseph Paca, Starý Tekov (letter No. 42357/2009 dated 3 September 2009)

The citizens support the completion. However, they would welcome a solution to build a bridge across the river Hron between the municipalities Starý Tekov and Nový Tekov, which would serve as an escape route for the residents of Nový Tekov in case of accidents.

5.3. THE STANDPOINTS OF NGOS AND ENVIRONMENTAL PROTECTION ACTIVISTS

Non-governmental environmental protection organisations and activists (Slatinka Association, Spoločnosť priateľov Slatinky (letter No. 43543-1277hp dated 22 September 2009), Energia 2000 (letter No. 42817-1277hp dated 17 September 2009), Za matku Zem (letter No. 44704-1277hp dated 28 September 2009), Greenpeace Slovakia (letter No. 44988-1277hp dated 25 September 2009), Ing. Križan Josef (letter No. 44157-1277hp of 25 September 2009), Greenpeace International, represented by Jan Haverkamp (letter No. 44135-1277hp dated 24 September 2009), shared comments from Bund für Umwelt und Naturschutz eV (BUND) and the Bund und Naturschutz in Bayern eV (BN) (letter No. 46398-1277hp dated 06 October 2009)), who expressed themselves within the assessment process, were in all positions against the implementation of the proposed activity and / or developing a new assessment report and a new public hearing.

According to § 35 paragraph 5 Law No. 5. 24/2006 Coll., the ministry asked the proposer (letter No. 1277/2009-3, 4/hp dated 01 October 2009) to add observations arising from these positions in the assessment reports.

The proposer answered to 196 comments from civic associations, the public and interested public, in the Supplement to the report (within scale of 78 pages), which he delivered to the Ministry of Environment on 02 November 2009 (letter No. SE/2009/120678).

Several comments are aimed at unsystematicness during reports development, stylistic and terminological deficiencies, translation deficiencies, which were criticized also by expertise, further at the safety aspects of the power plant, outstanding back-end issues of nuclear energy, the EIA procedure in this proposed activity and so on. Some comments were highly emotionally charged. Commenters often respond to the problem at its first mentioning in the text, while the topic is often more subject-oriented and developed in other parts of the report or appendices.

Several associations and individuals were not satisfied with the quality and range of the proposer's responses (in certain specific cases rightly according to the expertise) and gave the disagreement in a writing form to the Ministry of the Environment (Energia 2000 (letter dated 17 December 2009), Greenpeace Slovakia (letter No. 59024-1277 dated 25 November 2009), Greenpeace International, represented by Jan Haverkamp (letter No. 58648-1277 dated 30 November 2009), Ing. Križan Josef (letter No. 57664-1277 dated 25 November 2009)).

It should be also noted that during the public consultation of the report, including cross-border consultations, the proposer's experts prepared presentations with professional commentary to key comments concerning the proposed activity and they explained in more detail and provided more detailed information during the public hearings. A more detailed description of the evaluation of the proposer's responses to statements of NGOs and environmental protection activists is stated in the expertise of the evaluation report prepared according to § 36 of Law No. 24/2006 Coll.

5.4. OTHER STANDPOINTS TO THE PROPOSED ACTIVITY

European Commission - The Commission standpoint of 15 July 2008 under Article 43 of the Euratom Treaty, the completion of the works of the 3rd and 4th Block of the Mochovce Nuclear Power Plant in Slovakia (No. K(2008)3560)

Slovenské elektrárne, in accordance with Art No. 41 of the Euratom Treaty dated 16 July 2007, announced an investment project for completion of the Units 3 and 4 of the Nuclear Power Plant Mochovce to the Commission. The standpoint of the Commission is as follows:

The Commission, based on the stated evaluation and intensive negotiations with investors as well as with national regulatory authorities, took a view that the proposed investment meets the objectives of the Euratom Treaty, under the condition that necessary additional steps, recommended in this standpoint, will be accepted.

The Commission notes, among others, safety of the project in the paragraphs 8 a, b:

a) A standpoint for the new facility must be based on application of national legislation and also on a recognized international best practice, because of the absence of EU-wide legislation on the safety of nuclear facilities.

b) The Commission notes that the basic project of the Units 3 and 4 is in many aspects based on the basic project of the Units 1 and 2. This project is based on VVER technology with subsequent development of this technology, the modernization which has been successfully carried out for existing VVER reactors in several countries, allowing them to achieve sufficient protection from internal events.

The Commission emphasizes that the investor remains solely responsible to ensure that the selected project will provide an equivalent level of protection as a full-scale containment. It may be expected, that the level of protection provided by full-scale containment structures will become a standard practice for the future project solutions for any new nuclear power plants in the EU. This level of protection has been applied to recent construction projects under examination by the Commission.

For this purpose, the Commission recommends that the investor in close collaboration with national authorities:

1. should develop a reference scenario involving deterministic effects from an external source (e.g. a small aircraft impact) in conformity with international best practice,

2. should evaluate and implement appropriate additional features, functional potential and management strategies in order to resist possible deterministic effects from an external source (e.g., impact of small aircraft with bad intention) within the project base of the proposed investment, building on basis mentioned above, so that the project will be in compliance with the current best practice.

The Commission also stresses the importance of diversifying supply sources within the aspect of secure supply of nuclear fuel for the whole EU nuclear industry as well as proper management of funds intended to finance decommissioning of nuclear installations and management of spent fuel and radioactive waste, in accordance with the recommendation[3].

Expression of an independent group of experts Safety Board

An independent group of experts in the field of nuclear reactors from the IAEA, France, Germany, Russia, Austria and Italy, which examined the MO34 Safety Concept processed by VUJE Trnava and ÚJV Řež (the Czech Republic), has released the viewpoint that "no design aspect that has been reviewed and discussed prevents Mochovce 3 and 4 units from achieving a very high safety standard and protecting the workers, the public, and the environment according with current applicable international standards." [4].

[3] European Commission recommendation No. 2006/851/Euratom, Ú. v. EÚ L. 33O, 28 November. 2006, page 31 – 35.

[4] Safety Board Final Report, No. PNM34080125, December 2007

6. EXPERTISE DEVELOPEMENT IN ACCORDANCE WITH § 36 OF THE LAW

According to § 36 of Law No. 2. 24/2006 Coll., Ministry of Environment of the SR has designated (letter No. 1277/2009-3, 4/hp dated 10 November 2009) DECOM a.s., Trnava, as a legal entity registered in the list of professionally qualified persons with No. 33/02-OPV-PO according to Ministry of Environment Decree No. 113/2006 Coll., which determines details of expert qualification for environmental impact assessment, as a processor of the environmental impact report of the proposed activity "NPP Mochovce WWER 4 x 440 MW – 3. Construction".

The Ministry of Environment has agreed, at the request of the assessment processor (letter No. 2010/001/Tk/Sr dated 07 January 2010), to extend the deadline of expertise development, under § 36 paragraph 41 of the law, by 30 days, i.e. no later than 15 February 2010. The assessment processor justified his request particularly by:

- extremely wide range of documentation (almost 2000 pages)
- the fact that the document language versions are not identical,
- continuously supplied additional documentation necessary to develop the assessment,
- confusedness of documentation caused by unsystematicness during the preparation of the evaluation report and by little attention dedicated to its editing, which resulted in a considerable number of errors and terminological confusion,
- the fact that a significant number of comments and opinions on the proposed activities was related to nuclear safety, they were in varying degrees of detail taken from the security documentation, which was not available for the processor.

The assessment processor developed an expertise and a final opinion draft on the basis of submitted documentation – Evaluation reports (including all attachments), its appendix according to § 35 paragraph 5 and 6 of the Law. 24/2006 Coll., received opinions, documentation and records of a public hearing of the evaluation report and cross-border consultations, requested additional specialized studies, like an expert opinion, proposer's additional information, consultations with domestic and foreign experts, relevant environmental laws and their own knowledge and information in this area.

The assessment report was prepared in the range of 478 pages of the text with pictures and tables and attachments: 0.1 - 0.8 (building permits and decisions of the authorities, the scope of assessment and basic legislation in the energy sector), 1 ownership, 2.0 (map data), 3.1 (photo documentation of a current state), 4.1 (Assessment of radiological impact of discharges of radioactive substances from the operation of 4 reactors of the NPP Mochovce), 4.2 (Report on the radioactivity control around the SE-EMO for the years 2005, 2006, 2007 and 2008) and 5.1-5.10 (thematic blocks). A general comprehensive final report is set out in Annex No. X.

Contents and structure of the text part is prepared according to Annex. 11 of the Act and intended scope of the assessment and it also includes incorporating chapters "Program Framework" and "Project Framework". This segmentation decreases the clarity, because individual sector problems data in these chapters can be found in several parts of the report (not always accompanied by references), it is repeated, even some data

is in the annexes, it is processed in different ways in different parts and sometimes different terminology is used, which is not always correct.

Contents and structure of the text part is drawn with varying depth and level of professional fulfillment of each chapter, while it does not always have satisfactory quality, but sufficiently captures all the relevant circumstances which might affect the environment in connection with the implementation of the proposed activity. Exception is the consequences of severe accidents, which were outlined in addition during public hearings.

Extensive annexes to the assessment report provide a sufficient picture of the spatial location, the technological solutions of the proposed activity and of the level of nuclear safety and radiation protection. These annexes adequately support individual claims of expected impacts of the proposed activity on health and the environment. It should be noted that for the considered range of issues relevant Annexes No. 4 and 5 are qualitatively at a higher level than the text of the report.

Fundamental improvement of the text segmentation, revision of the terminology, harmonization/unification of terms used in different parts and annexes and stylistic adaptation of the text would significantly help to raise the quality of reports under consideration. It is clear that many of the imperfections are caused by the improper translation of some text parts from English into Slovak language and vice versa, or by multiple translations, while this text has not been revised and aligned with the relevant terminology in the Slovak language. As a result of these facts there are prima facie technical errors in the text. These errors were noticed not only by domestic but also foreign participants from Poland, Hungary and Austria in cross-border consultations.

The assessment report of this activity that is a subject of a great public interest was provided abroad in the present issue and above mentioned facts led to unwanted call in question of the entire intention and work of professionals, who participate in this report by the way of documents and sub-reports development (particularly the opinions and comments of the public and NGOs organizations).

Despite the stylistic and terminological shortcomings of some report parts and a considerable rate of confusedness, it is a document that enables to obtain a comprehensive knowledge of the proposed activity impacts, it is just very difficult to find related thematic units and their relevant data. All environmental assessments have been carried out considering the operation impact of all the four units.

Consent with the implementation of the proposed activity on the site (except Austrian and the unclear position of Ukraine) was expressed in the process of the proposed activity evaluation under the law, in a number of received opinions to the report (but not to its Appendix), as well as in the whole evaluation process. The proposer responded to all opinions openly, professionally and appropriately.

Results of the environmental impact assessment process of the proposed activity under the Act No. 24/2006 Coll. sufficiently demonstrated that the implementation of the proposed activity is consistent with the current generally accepted practices, standards and criteria of sustainability and human-environmental carrying capacity. Actual or potential negative impacts of the proposed activities that have been identified in the assessment are acceptable or possible to eliminate, or it is possible to restrict them after the application of the proposed remediation and conditions for their elimination or reduction mentioned in the report and which have been reflected in the final opinion draft.

Comprehensive assessment of the expected impacts has not been made quite clear. However, the findings of positive and negative impacts of their activities and interactions are sufficiently developed.

The present report, despite some reasonable comments in the opinions of the public and concerned public, the comments of the cross-border consultation and of the expertise processor demonstrate the effects of implementation of the proposed activity on the environment sufficiently to ensure that it would be possible to make a favourable decision on putting MO34 into operation, after fulfilling the conditions of the decisions of the Nuclear Regulatory Authority No. 246, 266 and 267/2008, and after considering the relevant documentation and preparedness by the Nuclear Regulatory Authority.

IV. COMPREHENSIVE ASSESSMENT OF PROPOSED ACTIVITY ENVIRONMENTAL IMPACTS INCLUDING HEALTH

Effects of proposed activities on the related location have been comprehensively documented by a detailed review of all submitted materials and statements of concerned parties. Expected impacts of proposed activities on the environment were divided into radiation and non-radiation impacts. These impacts have been evaluated in many ways - direct, indirect and cumulative, positive and negative. This section is dealing with evaluation of the proposed activities effects in the view of the individual components of the environment.

The radioactive gaseous and liquid effluents impact during a normal operation, or radioactive effluents during project events and major accidents

For four operating nuclear power units at Mochovce it can be assumed that the balance values of annual limits of gaseous effluents (activity of radioactive noble gases, ^{131}I in a gaseous and aerosol form and the mixture of radionuclides other than ^{131}I - with a half-life of less than 8 days - in aerosols) and the balance values of annual limits of liquid effluents (activity of tritium, fission and corrosion products, except tritium) will double the current limit MO12. If effluents reach these values, the effective dose for the individual of a critical population group calculated for an abnormal operation by model calculations using a validated program RDEMO is about 1.8% of the threshold value of an annual effective dose (250 μSv) established by the legislation for the individual of a critical population group.

If the effluents should be twice the actual values of MO12 released in recent years, the effective dose for the individual of a critical population group will be about 20 times lower. Even if it is considering with the limiting value encompassed in the effluents, the effective dose value will be about three orders of magnitude lower than the effective dose of the population coming from external and internal radiation from natural sources of radiation.

Regarding the project events impact, guideline values were set in opinion of the District Public Health Authority OOZPŽ/8155/2006 published in 2007 by ÚVZ for MO12, - the conditions in which, from the safety evaluation aspects of the project events impact, these events can be regarded as the managed project solutions: the value of 50 mSv for an effective dose and the value of 250 mSv for a dose absorbed in the thyroid gland. Security analyses made in conformity with the safety instructions of the U.S. Nuclear Regulatory Authority Regulatory Guide 1.70 and in conformity with the safety instructions of the NRA SR, showed, considering conservative assumptions in the project events scenarios (LOCA and PRISE - secession of SG lid) and by using a computer code for calculating the impact of external events RTARC, that effective dose values at a distance of 2, or 3 km from the point of release are well below the set guideline values.

Information about severe accidents impacts and their radiological consequences of their sequences, analyzed in this NPP MO34 project were submitted during a public hearing. This issue was also the subject of a monothematic expert seminar organized in the framework of the bilateral Slovakia-Austrian agreement on issues of a common interest in the nuclear energy field. The data of cross-border severe accident impacts considered in the project MO34 were prepared and provided at the request of the Hungarian and Austrian experts. Information was developed on the basis of the data contained in the preliminary safety report MO34 and where it is noted that the cross-border impact, expressed in terms of effective dose values for 7 days from the start of the accident for the exposed population, caused by a sequence initiated by

BLACKOUT (which has higher radiation effects) is about 4.3 μSv at a distance of 35 km from the crash unit (Hungary), or approximately 0.83 μSv at a distance of 100 km from the crash unit (Austria). These values are about three orders of magnitude lower than the guideline values of intervention levels for urgent remediation (Annex No. 10. of Statutory order No. 345/2006 Coll.)

It follows that:

- radioactive release consequences to the population during normal operation are insignificant,
- project design accidents are manageable by a project solution so that no unwanted exposure of the population occurs, and this already at a distance of 2, or 3 km from the release site,
- major accidents consequences on the neighbouring states borders will not require an urgent implementation of interventions within the meaning of guideline values, as listed in the Slovak legislative regulations.

Population impact

The assessment report provides a data comparison about health of population from Levice, Senica and Dunajska Streda districts, in which it demonstrates a population health impact by an incidence of cancers in the period before as well as after starting the first two units of MO. Statistical data from the district of Levice, Dunajska Streda and Senica about the incidence of malignant tumors of the period before starting the first two units of MO as well as of the period after the start show sufficiently that actual operation of the Mochovce NPP has not demonstrated a negative impact on the health status of the residents in the monitored district of Levice. The chosen form of data presentation from the National Cancer Register, although it does not distinguish cancers by type, but no epidemiological studies around the world in nuclear power facilities were at levels of an effective dose, which the population of around Mochovce could be exposed (see above) to, demonstrated the effects of the incidence of thyroid disease, leukemia or other malignancies.

Cost of study implementation that would address a connection between the incidence of malignancy and influence of the nuclear power plants operation has no scientific justification. The conclusions of the report that it is not possible to distinguish the number of deaths from natural causes from deaths caused due to the presence of the Mochovce NPP, since the use of calculated values of an annual effective dose to estimate a risk of cancer developing in the population leads to cancer developing approximately in 1 case per 100 million inhabitants, can be accepted without any reservations.

Impact on rock environment

Construction work is already around 70% implemented and the proposed activity will be implemented for the most parts within already constructed building objects, so it can not have a substantial influence on the rock environment. Operation of MO34 will not affect the rock environment.

Impact on climate and climate changes

Implementation of the proposed activity will affect the atmosphere locally. These effects are due to leakage of combustion products (NO_x, SO_x and CO_2) and water vapor emissions from cooling towers. The nuclear

power plant is not an important source of conventional air emissions such as NO_x, SO_x, CO_2 and solid particles. Major sources of such convential emissions during an operation are the backup diesel generators.

Impacts of emissions from the backup diesel generators that are not in a permanent operation but must be regularly tested, were rated by the SCREEN 3 (U.S. EPA) model and compared with the directives of the World Health Organization (WHO) and with Canadian directives (Ontario Ministry of Environment). The criteria are strict enough and the results presented in the report can comply with the conclusion that NPP is not a significant source of conventional emissions.

Leakage of water vapor and heat through cooling towers during a full MO12 operation represent an emission about 3,740 MW of thermal energy into the air in a form of waste heat. Taking into consideration a relatively low energy output of nuclear power plants, emissions of heat and water could lead to local rather than to regional climate changes. The following effects come into consideration:

- Increased average humidity in the ground layer,
- increased average air temperature in ground layer
- increased incidence of ground fog,
- Increased amount of rainfall,
- Increased formation of hoarfrost,
- Decreased time of sunshine,
- formation of water vapor clouds from cooling towers.

The impact intensity depends on the power plant power and season. The greatest impact intensity can be expected in summer during summer months. In summary the effects of emissions from cooling towers on the local microclimate are irrelevant or barely noticeable.

Waste waters

Waste water from the NPP Mochovce is released into the river Hron (waste water from MO12 and rainfall water collected in the Mochovce NPP), the Telinský brook (sanitary water from MO34 and drainage water from the pond in Čifáre), the Širočina brook (drainage water coming from the sludge drying process generated in the treatment of potable water from the source Červený Hradok). The Telinský brook and Širočina flow into the river Žitava.

The main source of waste water released into the river Hron is industrial waste water (cooling water) from MO12. Industrial waste water can be divided into:

- waste water without radionuclides comprising rinsing of the cooling tower and water from the resin recovery to produce demineralized water;
- waste water with the presence of radionuclides of low activity, which arises from vapour condensation of liquid radioactive waste condition.

It is clear, based on the information contained in the Assessment Report (Chapter II2.1), that the limits of waste waters released into surface streams were not exceeded.

During all four units operation, it can be assumed that the volume of released waste water is doubled and the quality of released waste water using existing technologies for the water treatment will not change significantly. Under these assumptions, the permitted limits to release waste water from the nuclear power plant and for potable water conditions in Červený Hrádok will be fulfilled. It is necessary to perform measurements on the Čifáre pond for the purpose of no exceeding limits.

Conventional waste management

During the operation, after increase of electricity generation due to putting the Units 3 and 4 in an operation, increased production of non-radioactive waste occurs. Waste types will remain unchanged and an effective waste separation is assumed.

Radioactive waste management

Radioactive wastes arise during an operation of the nuclear power plant, and during its decommissioning. In view of their state, radioactive wastes are divided into: gaseous, liquid and solid.

Type of every state of radioactive waste requires the operator to have a specific approach for the collection, sorting, pretreatment, storage, processing and final adjustments to a form suitable for storage and final disposal or release in the environment.

Capturing radioactive gases is difficult and the majority are released in the air, based on the authorized limits specified for each radionuclide. If they can not be freely released when they arise, they are kept in (diminishing, extinguishing) tanks for gas RAW decay storage for the time necessary and after reaching the limit values they are emitted in the air.

All liquid wastes from the operation are subject to radiological and chemical monitoring and in case their quality meets the prescribed limits, they can be released into the environment. Part of the waste are liquid wastes that have to be treated and subsequently subjected to chemical and radiological monitoring before their release. Part of the liquid waste can be re-circulated and returned for a technological re-use, with using cleaning stations systems in technological circuits. The last group are the liquid wastes that are not useful and can not be released in the environment. These wastes are the following: radioactive concentrates, low and intermediate level radioactive sorbents, radioactive petroleum products and radioactive sludge and sediments. These wastes will be stored in the building of auxiliary operations.

Liquid Radioactive Waste and spent ionexes will be transported through pipe routes either to storage tanks in an auxiliary operations building, or directly into the FT LRAW Mochovce (the final treatment of liquid radioactive waste) for treatment. Maximum capacity of treatment and conditioning of liquid radioactive waste by cementation and bitumenation in the Mochovce FT LRAW is 870 m^3/year for radioactive concentrates and 40 m^3/year for sorbents and sludge, which corresponds to a 4-year production of two units. It is obvious that this capacity is sufficient to also treat liquid radioactive waste of the Units 3 and 4.

Active oils, lubricants and solvent will be treated in the Bohunice RAW Treatment Centre. Transportation will be made by using a special container which meets the requirements of transport on public roads.

Indented sludge from a settling tank will be treated by sludge fixation into a stabilizing matrix at the technology node of sludge fixation - 'fixation in situ. This technology will be located in the building of auxiliary operations.

Technical solutions for the solid RAW management are based on the fact that the produced waste is according to the activity sorted on radioactive waste and waste which is releasable to the environment. Its further subdivisions are related to further treatment methods. The waste arising within the controlled area is managed as potentially radioactive.

Produced radioactive waste is included to the flow of radioactive materials in the process of waste management and it is temporarily stored in the waste storage facility or within the storage area of the auxiliary building.

Collection and sorting of solid radioactive waste include: areas of collection (temporary and permanent) and equipment or means for transporting the solid radioactive waste from the place of origin and sorting to the temporary storage facilities. Management of low and intermediate level solid radioactive waste in the Mochovce NPP has the following phases:

1. collection, sorting and fragmentation of waste at the place of collection and storage within the NPP locality,
2. transport of combustible solid radioactive waste to the Bohunice RAW Treatment Centre and after the treatment, transport to the National Radioactive Waste Repository,
3. volume reduction (low pressure compaction) of non-combustible solid radioactive waste, their transport to the Bohunice RAW Treatment Centre and after treatment (conditioning) transport to the National Radioactive Waste Repository,
4. conditioning of other solid radioactive waste by cementation in the facility for the waste conditioning and transport to the National Radioactive Waste Repository.

Impacts on water rates

Implementation of the proposed activity will affect surface and ground water, especially during the operation period of a nuclear facility. The most likely impacts will be related to the leakage of heat and to liquid effluents which may affect the quality of surface and ground water and living conditions for aquatic habitats.

Impacts on land

The proposed activity will be performed directly in the EMO area and therefore completion, commissioning and operation of the units EMO34 does not require additional occupation of agricultural or forest land or does not affect, in any manner, the purpose of the land use.

The system of rainfall drainage from the Mochovce site is common for the EMO12 and MO34 units. Therefore, an impact on the stability and soil erosion is unlikely.

The fallout of non-radioactive air pollution from EMO12 and MO34 will form only a weak part of overall air pollution fallout mainly caused by other distant sources. It means that the impact of non-radioactive air pollution on the land of NPP surroundings will not be substantial.

After the implementation of the completion project, a normal operation of NPP will have an indirect impact on the land area through the atmosphere and air pollution fallout of emissions and radionuclides. If the set emission limits and limits for radionuclides discharging will not be exceeded, this impact will be negligible and the characteristics of the affected land area will not be changed.

Presumed impacts on vegetation, flora and fauna, natural resources and protected areas

It is not expected that the operation of MO34 could (either by synergistic or cumulative effects with existing nuclear units and natural background) substantially influence vegetation, flora and fauna.

Impacts of proposed activities on biodiversity and gene pool will be mediated through abiotic components of the natural environment. In previous surveys of territory ecosystems it was concluded that EMO NPP has no impact on biodiversity, gene pool and genetic mutations of organism caused by radiation (mutation). Natural ecosystems, gene pool and biodiversity in the studied territory are primarily determined by an agricultural production. Similarly, it is unlikely to consider the increase of pollutants in the environment.

Impacts on landscape

By the implementation of the proposed activity the current landscape and scenery of the country will not be disrupted, because the construction of NPP is already done in the range of 70% and the ongoing completion of technological equipment inside the buildings of MO34 and the subsequent procedure of putting the NPP into operation will not change the country scenery.

Impacts on protected areas and their protection zones

The proposed activity will have no impact on the geological component during the operation or subsequently during the nuclear facility decommissioning. Activities will be done in the locality of EMO NPP which is located approximately in the centre of 3 kilometres protection zone of the nuclear power plant (zone of facility itself). In this zone, the protection areas or other protection zones are not, nor can be declared without taking into account the existing nuclear facility. Conservatively determined expected contribution of the facility just on the edge of the zone is below the natural background and does not cause any negative effects in farther located protected areas and protected zones.

Noise and vibration

Noise from the operation of the Mochovce nuclear power plant in the facility surroundings is negligible. Moreover, the distance to the nearest residence is approximately 3 km, where the noise level from the Mochovce power plant is practically zero. Increased noise levels were identified only at a local level (within the boundaries of the facility) near the technological equipment (machines) and they only affect the employees moving near them.

Radiation and other physical fields

During the operation of the nuclear reactor the gamma and neutron radiation is emitted. Other sources of radiation are primary circuit reactor cooling systems, active reactor parts (the reactor core), assemblies of spent fuel located in the spent fuel pools subsequently transported to the ISFS (the Bohunice site); in the future to the dry spent fuel storage within the Mochovce NPP locality.

In the management of mentioned radiation sources, the main aim is to protect the NPP personnel which practically means that the population and environment is also sufficiently protected.

Impacts on urban complex and land use

The implementation of the proposed activity does not change the basic relations within the current EMO NPP area urban complex. Activities will have no direct impact on the cultural and historical monuments, archaeological and paleontological sites and even on the intangible natural or cultural heritage in the affected area.

The agricultural or industrial production, infrastructure, services, opportunities for holiday and tourism will not be adversely affected. Traffic on the local roads will increase slightly until the start of the operation.

Natural ingredients of the country will not be affected. The purpose of using the land area is unchanged. The impact of the proposed activity on the land structure and use is practically negligible.

Socio-economic impacts

The implementation of the proposed activity will lead to the job creation and stabilization or improvement of living standards in the affected area. Potential of job opportunities creates an indirect positive effect on the development of municipalities, infrastructure, services and it improves the monuments keeping, etc. Implementation of the proposed activities will increase the production of electricity for the agriculture, industry, local economy, transport, services and tourism and it does not require the creation of new structures, operations and infrastructure.

Assessment of positive and negative impacts including their interaction

Positive impact of the normal operation is represented by improvement of socio-economic stability and development of the region, as it has been in two Slovak regions with the nuclear power plants so far.

To the adverse effects, practically only the radiation load of the environment and population which will be approximately two times higher compared with the current situation have to be considered. But comparing with legislative limits for an annual effective dose to the individual from a critical group of population, the increase of doses is insignificant.

As an indirect effect, the additional production of non-radioactive waste, radioactive materials which are, because of their low radioactivity, releasable from institutional control (i.e. to the environment as non-radioactive), radioactive waste and spent fuel have to be considered. According to the nuclear power engineering back-end strategy approved by the authorities, assessed in the SEA process and adopted by the Government, the national system for radioactive waste and spent fuel management is now set up in such a way which ensures managing an expected amount of these materials.

The capacity of the National Radioactive Waste Repository in Mochovce was originally projected to dispose the operational radioactive waste from eight VVER nuclear power units (and acceptable waste from the A1 NPP decommissioning).

Previously implemented and planned long term storage of spent fuel and waste that could not be disposed in an existing radioactive waste repository solves the problem of managing such materials (waste) for several decades. This could be a sufficient time period for developing such technical and institutional solutions allowing a deep geological disposal of them, which is characterized as a safe final step in the management process.

Another indirect impact is the need for decommissioning of the nuclear power plant. The duration of the decommissioning process could be comparable to the operation period. The final step of the process is the disposal of waste from dismantling and demolition activities and release of the NPP equipment and/or the NPP locality from the institutional control - unconditional or in accordance with restrictive conditions (for example a ban for construction of houses, for crops growing used for food production or animal husbandry, etc.). Decommissioning of the power plant will be the subject of a separate EIA process.

The nuclear power engineering back-end strategy, adopted in Slovak laws, says that the proponent is not directly responsible for the disposal of waste or decommissioning. But in case the nuclear energy is used for peaceful purposes, the "polluter pays" principle is generally adopted.

In addition to the impacts of a normal operation, the potential impacts of the project or severe accidents have to be included into the assessment. With the exception of severe accidents issues and their local or global consequences which were explained at the public hearing and consultation - according to the opinion of an assessor, the report satisfactorily discusses also these mentioned negative impacts - risks. Conclusions of safety analyses are interpreted by need of interventions after the accident; in case of legislatively set limit values for population exposure they should be exceeded.

For completeness, the negative impacts during the units' completion have to be also considered (increased traffic, noise, waste from construction). These impacts will last until the MO34 operation period starts.

Conclusion: all the mentioned negative impacts (either real or potential) are, according to the opinion of the assessor, acceptable compared with the demonstrated socio-economic benefits in the region development process.

V. OVERALL IMPACTS ASSESSMENT OF THE PROPOSED ACTIVITY ON PROPOSED BIRDS RESERVATIONS, ON EUROPEAN INTEREST AREAS OR ON A COHERENT EUROPEAN NETWORK OF PROTECTED AREAS (NATURA 2000)

MO34 will be operated in the enclosed area of the EMO NPP located approximately in the centre of 3 kilometre protection zone of the nuclear power plant. In this zone there are not, nor can be declared any protected areas or other protection zones without taking into account the existing nuclear facilities. Conservatively assessed expected contribution of the facility is, already on the edge of the area, below the natural background and does not cause any negative impacts on protected areas and protected zones.

Within the 5-10 km zone from the EMO locality the SAS Arboretum Mlyňany department and natural formation Patianska Cerina are located. On the north-east outer edge of the mentioned zone the south-western part of CHKO Štiavnica Mountains is located. An effect of EMO 1 2 Mochovce on these protected formations has not been demonstrated yet.

However, it has to be reminded that Ministry of Environment and Water of Hungary in its final statement (letter No. 1KMF-70/2009 dated 18/12/2009) notes that the effects of discharging of cooling water to the river Hron on environmental and land protection issues in natural areas of the National Park Duna-Ipoly in 50 km distance were not analyzed, specific areas of the protection Natura 2000 - Börzsöny and Visegrád mountains and also the specific protection areas of Natura 2000 with importance for the Community Börzsöny and Alsó-Ipoly are mentioned in the final statement of Hungary to MO34 (letter No. 1KMF-70/2009 dated 18/12/ 2009).

VI. CONCLUSION

1. FINAL STATEMENT TO THE PROPOSED ACTIVITY

Based on the complex assessment of the proposed activity, submitted statements as well as a state of the environment within the area, submitted positive or negative impacts of the proposed activity on the environment components and proposed measures for elimination or mitigation of potential negative impacts

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the implementation of the proposed activity **„Atómová elektráreň Mochovce VVER 4 x 440MW - 3. Stavba"** i.e. commissioning of a nuclear unit to the operation in case the conditions, mentioned in VI. 3 of the final statement, are fulfilled.

2. RECOMMENDED ALTERNATIVE

Study and then statement on the environmental impacts assessment of the proposed activity „Atómová elektráreň Mochovce VVER 4x440MW - 3. stavba" were presented by the proponent in zero and in one alternative of the proposed activity (commissioning, the operation of 2 units MO34 with an output power of 2 x 440 MW are under construction in the Mochovce NPP area) because Ministry of Environment, as a result for the request of the proponent dated 15/7/2008 abandoned, according to § 22 paragraph. 7 of Law. 24/2006 Coll., from the requirement having more alternatives of the proposed activity (Letter No. 7451/2008-3.4/hp – 3, 4 dated 31/07/2008).

By installing new components (turbines and other technological parts) in the secondary circuit of MO34, the higher output power will be reached and efficiency up to 31.7% will be achieved for each unit, without any change in the primary circuit system. Nominal thermal reactor power output (1375 MWth) remains at the same level, the total electric power output will be 471 MWe (436 MWe without a self-consumption of NPP).

Based on a complex impacts assessment of proposed activities on the environment, including socio-economic impacts in the region, Slovak Republic's interests in the field of power engineering, situation with the NPP partly completion, the assessed alternative is recommended because socio-economic and society benefits highly outweigh the acceptable environmental impacts compared with the zero alternative, representing continuation of the operation of the nuclear power plants EMO12 and non-commissioning of MO34.

3. RECOMMENDED CONDITIONS FOR THE CONSTRUCTION AND OPERATION PHASE OF THE PROPOSED ACTIVITY

The basic requirement for receiving a permission for the nuclear facility commissioning process and subsequent permits for the operation period will be the fulfilment of all requirements given by NRA SR

Orders No. 246/2008, 266/2008 and 267/2008. According to the law, the basic requirement for MO34 completion is the NRA SR permission, respectively an official approval issued after considering the documentation prepared in accordance with corresponding legislative acts and after considering the documentation for the operation period and the parameters and preparedness of the facility itself.

Based on the assessment of the environmental situation in the concerned area, the assessment results of the impacts of the proposed activity on the environment in the concerned area, the statements of the local communities, the statements of the interested bodies, the results of a cross-border consultation and concerned domestic and foreign public, the following requirements are recommended to be implemented the proposed activity:

Requirements to proponent

1. To continue with informing and workshops organizing in nuclear safety topics with experts from the Republic of Austria under the Austrian-Slovak bilateral agreement under the coordination of the NRA SR.
2. Proponent, in cooperating with the NRA SR, is advised to implement the recommendations from the statement of the Commission of the European Community under Art. 43 of the Euratom Treaty (K (2008) 3560 dated 15/7/2008) into the safety assessment documentation.
3. To initiate the intergovernmental agreement on the exchange of radiological data from 40 monitoring stations located in areas 20 km from Mochovce to the Hungarian national centre and for providing the measurement results of the Hungarian remote control radiation monitoring, safety and control system to Slovakia.
4. To allow the Hungarian authorities, responsible mainly for emergency planning, to set up and operate at least three remote control radiological measurements stations directed to Hungary within a radius of 30 km from the Mochovce NPP.
5. To provide the exchange of data from aerosol measurement devices operating by Austria in the Hungary and Slovakia region.
6. To give attention to the requirements for the water intake in relation to water flow in the Hron river for the purpose of operation, but also because of potential impacts on protected areas in Hungary. The assessment report does not analyze these facts beyond the valid permission for the water intake.
7. In the process of occupational safety and health requirements implementation it is necessary to finalize the guidelines for employer obligations, especially the requirements prescribed by Statutory Order No. 391/2006 Coll., Statutory Order No. 395/2006 Coll., Statutory Order No. 355/2006 Coll., Statutory Order No. 555/2006 Coll. and Statutory Order No. 357/2006 Coll.
8. To consider the requirements of the District Office for the road traffic in Levice.
9. To observe the Law. 355/2007 Coll. on Public health and amend certain laws.
10. To observe the Statutory Order No. 345/2006 on the Basic Safety Requirements on Personnel and Public Health Protection against Ionizing Radiation.
11. To manage the activities according to Act No. 541/2004 Coll. on the Peaceful Uses of Nuclear Energy (Atomic Act) and adjust and amend certain laws.
12. To observe the Decree of NRA SR No.50/2006 Coll., this provides details on the requirements for nuclear safety of nuclear facilities in the process of a site selection, design, construction,

commissioning, operation, decommissioning and a repository closure as well as criteria for the categorization of special equipment into safety classes.

13. To observe, also in the further periods, the regulations of Act No. 543/2002 Coll. on nature and landscape protection as amended and Act No. 223/2001 Coll. on waste as amended and related implementing regulations.
14. To observe the provisions of Law. No. 364/2004 Coll. on waters, as amended.
15. To ensure the compliance with the limit values for waste waters pollution indicators and the special waters indicators discharged into surface waters according to Statutory Order No. 296/2005 Coll.
16. To fully respect the comments and requirements of the water courses manager in accordance with actual permits and statutory orders.
17. To review the system for monitoring of environmental components (air, surface and ground water) in accordance with commissioning and operation of the MO34 units. If necessary, to adapt a monitoring system to new conditions.
18. After commissioning of NPP, to ensure the monitoring of parameters set up by the relevant authorities and specialized government authorities in the MO34 operation approval documents. To ensure continuous and detailed monitoring of the power plant operation environmental impact by a proper measurement of effluents and radioactive materials released from the regulatory control to the environment, and transferring the measured values to the values of doses for population throughout the operation period.
19. To regularly evaluate all proposed monitoring activities. Regularly provide the results of monitoring to the authorities, governmental bodies and public.
20. In the periodic assessment of nuclear safety during the operation, done under the requirements of NRA SR Decree No. 49/2006 Coll., evaluate also the impact on population health.
21. In the field of radiation protection the stakeholders are recommended to review the methods and formulation for limiting the discharge process from each nuclear facility to make it clear what annual effective dose was the upper optimization limit for their derivation, what are the localities specific activity conversion factors activity/ dose, what are the requirements for discharge monitoring in relation to the limits which shall reflect the need for evaluation of discharge in terms of the population dose load, what would be the way (content and frequency of reporting) for communication with the authorities.

System requirements

1. To solve the infrastructural issues of spent fuel management at Mochovce site (construction of an interim spent fuel storage facility).
2. Stakeholders are advised, as soon as possible, to implement the approved Nuclear power engineering back-end strategy in the field of a final solution for management of spent fuel and radioactive waste non-disposable in the existing National Radioactive Waste Repository.
3. Ministry of Economy is recommended to implement the approved Nuclear power engineering back-end strategy in the field of a final solution for management of spent fuel, including the creation of institutional preconditions under the provision of § 3, para. 9 of Atomic Act.

4. Ministry of Environment and Nuclear Regulatory Authority is recommended to issue a common safety guideline - methodological tool which determines the contents and scope of the EIA documentation in relation to scope and contents of safety documentation for various activities done at nuclear facilities.
5. To consider possibility of the feasibility of constructing a bridge cross the Horn river between Nový Tekov and Starý Tekov, considering it as an escape route for inhabitants of Nový Tekov in case of accidents (requirement of Nový Tekov Mayor and Stary Tekov inhabitant Jozef Pacal).

4. JUSTIFICATION OF FINAL STATEMENT INCLUDING THE ANALYSIS OF ACCEPTANCE OR NON-ACCEPTANCE OF A WRITTEN STATAMENTS TO THE ASSESSMENT

The final statement has been prepared according to § 37 para. 1 and 2 and Annex. No. 12 of the Act, assessment reports and other supplementary materials and documents, statements of stakeholders received during the assessment process, the results of the public hearing in the Slovak Republic, Hungary and Austria, consultations with Austrian and Hungarian party in the frame of the cross-border assessment (Czech, Polish and Ukrainian party has been also requested), documents for development of expertise according to § 36 of the Act and other supplementary materials and documents, discussions with competent staff of the proponent and also with the authorities.

Totally 16 comments and statements from assessment stakeholders were received. Stakeholders, who delivered the statement to the proposed activity in a writing form, recommend the proposed activity without any comment or by respecting the conditions written in the section VI. 3. of the final statement. This finding does not apply to the statements of domestic and foreign NGOs, conservation activists and opponents of peaceful uses of nuclear energy, who reject the proposed activity.

According the law, those impacts were evaluated in the environmental impact assessment, which were possible, at this stage of knowledge, to predict by applying and using real measured data from the operation.

The process of document evaluation and the final statement preparation was proceeded under the provisions of Law No. 24/2006 Coll. In the process of expertise and final statement preparation or development each comment and statement of stakeholders and experts was analyzed. Relevant comments are reflected in the proposals of measures.

In the assessment the real and also potential negative impacts of the proposed activity on the environment and public health were considered.

Recommendation for the implementation of the proposed activity results from the following facts:

1. The process of the impact assessment of the proposed activity: „Atómová elektráreň Mochovce VVER 4 x 440MW - 3. Stavba" shows the acceptability of the activity in terms of technical, legislative and procedural side.
2. A negative statement to the proposed activity was not noted by the authorities, municipalities and their inhabitants.
3. Negative impacts of the proposed activity were evaluated as acceptable and the activity as feasible.

4. Implementation of the activity is in accordance with approved strategic documents of the Slovak Republic in the field of power engineering.
5. The assessment process does not find any facts which could, after implementing the measures proposed in the assessment report and in the final statement, in a more serious way endanger the environment or health of inhabitants of the villages.
6. For the concerned area the proposed activity has a positive socio-economic impacts: creation of new jobs, stabilization and possible improvement of living standards and contribution to the development of infrastructure and civil amenities.
7. Based on the progress and results of public hearings to the proposed activity, as well as the assessment process of the proposed activity, it is possible to conclude that the public in the concerned area has no objections to the implementation of the proposed activity. At a joint public hearing on the assessment report in Bratislava on 18/09/2009, the representatives of all municipalities expressed their acceptance of the implementation of the proposed activity.
8. During the cross-border assessment process a significant impact was not confirmed and cross-border assessment participants agree with the implementation of the proposed activity (except Austria and Ukraine with which the consultation has not been ended yet but not as the fault of Slovakia).
9. Implementation does not lead to significant increase of the population effective doses compared with the existing legislative limits.

An important argument for the continuation of the construction is a granted permission for construction and a high level of completion of the Units 3 and 4, as well as the existence of buildings which are now in the operation, creating the systems required for operation systems of the Units 1 and 2 of the Mochovce NPP. These objects, with minimum modifications, can be attached to the building structures of the units 3 and 4.

Current level of completion of the unit EMO 3 and 4 is:

- building structure part is completed approximately up to 70 %,
- technological part is completed approximately up to 30 %.

Currently, the activities are done in accordance with the schedule and a building permission issued by the specialized construction authority (the NRA SR) in accordance with the Building Act - renewal and seismic improvements of steel structures, the roof replacement of the reactor hall, etc.

Considering the high level of completion and interdependence of objects with existing operating units, there is no other real alternative to the proposed activity from the economical, material and time point of view.

The positive standpoint of European Commission for planed investment according §. 43 Agreement about European Union establishment for nuclear energy (Euratom Treaty) was issued on 15th July 2008. European commission confirmed that the project fulfils the international requirements for nuclear safety.

International safety evaluations (IAEA, WANO, WENRA, Walkdown 1 and 2) confirmed that safety level operated at the Slovak Republic is comparable with nuclear power plants in other world countries. Notable conclusion of the international missions is that EMO12 has operated more than 10 year reliably, safely and without negative impact to the environment. All operational events were evaluated by Nuclear Regulatory

Authority of the SR under value 1 of INES scale. All missions have no negative standpoint to the safety of nuclear power plants operation in the Slovakia.

The proposed activity is in compliance with approved the Strategy of energy safety of the Slovak Republic with a view to year 2030. The aspects of radioactive waste and spent fuel management and decommissioning of nuclear power plants are in compliance with approved the Slovak Strategy of back-end of peaceful use of nuclear energy and prepared its update. All Slovak strategic documents must by proceed by procedure of SEA (Strategic Environment Assessment) according the law No. 24/2006 Coll.

5. REQUIRED MEASURE OF THE AFTER DESIGN ANALYSIS

Operator of the proposed activity which is under consideration according the law No. 24/2006 coll. is obliged according the § 39 article 1 the mentioned law ensure its monitoring and evaluation, primarily:

- systematic monitoring and measurement its impacts,
- control fulfillment all requirements assigned in the license and evaluate its efficiency,
- provide special comparison of expected impacts mentioned in the report of activity evaluation with the real stage.

The following recommendation of the required measure of the after design analysis to verify keeping between the real and expected impacts of activity to different parts of environment and on this base provide retreatment or adding of measures to reduce the negative impacts of activity:

1. Provide routine specific comparison all expected impacts mentioned in the EIA report with real stage in a scale and terms assigned in legislative documents and by respective permissive authority. In a case of negative deviation of real stage compared to expected impacts, on the base which the activity was approved, is required to provide such remedial measures which are assigned in license.
2. Elaborate monitoring program of releases and radioactive materials releases to the environment which is oriented to the control particular limits of safety operation of power plant and to estimate impacts of releases to the public and environment. Provide according the monitoring plan the measurements which will be follow up the concrete attributes of environment and record and evaluate possible negative impacts. The monitoring program has to contain also liability of periodic evaluation of measured results.
3. Introduce the conclusions of monitoring to the respective regulatory authority and provide during municipal offices of affected municipality their exposure by such way that public can possibility be familiar with the possible impact of activity to quality of environment which they live in.
4. Operator will provide periodic control of efficiency on internal plant level of all accepted measures concerning the impacts of environment and measures accepted to reduce negative impacts to the environment.
5. Provide during the operation the periodic safety evaluation according the paragraphs of Treaty of NRA SR č. 49/2006 Coll. about periodic evaluation of nuclear safety. In the frame of this provide complex evaluation of monitoring program for the whole time period of monitoring and on the base of results retreat a new proposal of monitoring for next time period.

6. The time period of after design analysis is defined in the monitoring program, which approved by competitive authority and will be valid at minimum till the end of nuclear power plant operation.
7. Accept to after design analysis also next important requirements coming up from standpoints of participant of appraisal process or from new legislative requirements.

VII. CONFIRMATION OF DATA CORRECTNESS

1. FINAL STANDPOINT AUTHORS

Ministry of Environment of the Slovak Republic

Department of evaluation and appraisal of impacts to the environment

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2. CONFIRMANTION OF DATA CORRECTNESS SIGNED BY AFECTED DEPUTY OF COMPETITIVE AUTHORITY

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Department of evaluation and appraisal of impacts to the environment director

Ministry of Environment of the Slovak Republic

3. PLACE AND DATE OF THE FINAL STANDPOINT ISSUE

Bratislava, ... 2010