

**MINISTERSTVO ŽIVOTNÉHO PROSTREDIA
SLOVENSKEJ REPUBLIKY**
Sekcia kvality životného prostredia
Odbor hodnotenia a posudzovania vplyvov na životné prostredie
Námestie Ľudovíta Štúra 1, 812 35 Bratislava

• **Mr. Mathias Sauer, Chair**
Implementation Committee
Convention on Environmental Impact
Assessment in a Transboundary Context
Secretariat
Palais des Nations
CH-1211 Geneva 10
Switzerland •

Váš list číslo/zo dňa
EIA/IC/INFO/6
13 October 2009

Naše číslo
1277/2009-3.4/hp

Vybavuje/☎
Ponecová/ 0905 682024

Bratislava
28. 12. 2009

Dear Mr. Mathias Sauer,

I would like inform you based on your letter ref. EIA/IC/INFO from 13th October, 2009 about process concerning environmental impact assessment of the proposed activity **“Nuclear Power Plant Mochovce 4x440 MW 3rd construction”**. In above mentioned letter has been made known to Slovak Republic that on seventeenth session of Implementation Committee Convention on Environmental Impact assessment in a Transboundary Context (Espoo, 1991) held in Geneva from 14th to 18th September, 2009, committee considered the information provided by the Government of Ukraine on 8th September and before that by the secretariat regarding proposed extension of the Mochovce Nuclear Power plant in Slovakia.

The Ministry of the environment of Slovak Republic (farther only “MoE SR”) wants to ensure you in connection with your letter that Slovak Republic consistently take care on the implementation of principles and requirements resulting from both national and international enactments and standards.

The process of assessment of the proposed activities in Slovak Republic is executed according to the law No. 24/2006 Coll. On Environmental Impact Assessment and his amendments (farther only “EIA National Law”) further according to Directive No. 85/337/EEC about the assessment of the impact of certain public and private project on the environment as amended by the Council Directive 97/11/ES and Council Directive 2003/35/ES and also according to Convention on Environmental Impact assessment in a Transboundary Context (farther only “Espoo Convnetion”).

Ministry of the environment of Slovak Republic is Authority responsible for coordinating activities related to EIA according to EIA National Law. The MoE SR is also authorised for management of transboundary assessment process.

MoE SR remarks that according to the EIA National Law the process of environmental impact assessment for proposed activities and their changes has to be made before the decision on the placement these one or before activities permission are issued. On the present MoE SR executed process of the assessment before start up of operation and operation of the third and fourth units of Mochovce Nuclear Power Plant in Slovak Republic under the name of “**Nuclear Power Plant Mochovce 4x440 MW 3rd construction**” (farther only “EMO 3,4”).

I would like to inform you in the sense of issues No. 17 – 20 listed in your letter about the process of the assessment of likely impact of proposed activity on the environment a people health. This one began thereby the company “Slovenske elektrarne, a.s., Plant 3rd and 4th units of Elektrarne Mochovce, 935 39 Mochovce” (farther only “Proponent”) delivered to the MoE SR intention – notification about activity on 13th February, 2009.

The proponent made in the intention quantitative impact assessment of proposed activity EMO 3,4 on the surrounding states (Austria, Hungary, Czech Republic, Ukraine, Poland). The results of the assessment was such, that impacts are negligible, practically zero from the radiation point of view. Impact of the proposed activity on the surrounding states has been also evaluated in the EIA Report, part C, section III, chapter 1.5.3. Two states have been evaluated in detail: Hungary and Austria. The criteria for such selection were vicinity to the proposed activity, orographic profile between proposed activity and state border and hydrology of area (Hungary lies downstream the Hron River). Results of the evaluation show that radiation impact of proposed activity in the area of doses to the citizens of two above mentioned states is negligible (dose are 4.3×10^{-9} Sv/year for Hungary and 1×10^{-11} Sv/year for Austria) in comparison with authorised dose limits to the citizen and the background dose (2.4×10^{-3} Sv/year, origin UNSCEAR). Water from Hron River has no impact to other states farther from proposed activity.

Above mentioned preliminary study was sent off on 22nd February, 2009 to the respective authorities of Slovak republic and to the affected parishes according to EIA National Law for issuing of their statement. This one has been also published on the web site of MoE SR www.enviroportal.sk for comments.

On the present Slovak Republic as party of origin of the transboundary assessment of proposed activity sent off notification through contact points according to Article 3 Espoo Convention to all affected parties that have state border with Slovak Republic – Poland, Ukraine, Hungary, Czech Republic and Austria. Notification has been sent by the letter No. 1277/2009-3.4/hp from 20th February, 2009. This one comprises together with supplements all necessary information according to Article 3 Espoo Convention in Slovak and English languages in written form and also in electronic form on CD. Consistent documentation of intention of proposed activity has been sent in the frame of the notification to affected parties. Slovak Republic considers on this base that to affected parties have been provided by above standard information about proposed activity. Ukraine has been legitimate addressed in the frame of the transboundary assessment through contact persons of affected party, who are Mr.

Volodymyr A. Buchko and Mrs. Olga Marushevka listed on the official web site Espoo Convention.

Only Austria, Czech Republic, Poland and Hungary have reacted that they will take part on the transboundary assessment of proposed intention EMO 3, 4 until dead-line for comments, in this case it was 2nd April, 2009.

Ukraine as affected party did not react to the party of origin by the dead-line stated in above mentioned notification, whether it intend to participate on the process of the transboundary environmental impact assessment.

MoE SR issued in 29th May 2009 scope of assessment to the intention EMO 3, 4 according to EIA National Law. In this scope have been taken into consideration all comments and recommendations of the respective authorities from party of origin that is in this case Slovak Republic, affected parties – Austria, Czech Republic, Poland and Hungary and also comments from the laic and technical public to intention EMO 3, 4. The proponent has elaborated the report EIA on the base of the scope of assessment according to Appendix 11 of EIA National Law and also according to Appendix II of Espoo Convention.

I have to regretfully state that minister of environment of Slovak Republic Mr. Tursky received only on 17th June, 2009 letter from Ukraine minister of environment Mr. Filipczuk with demand for delivery of notification on assessed activity EMO 3, 4. MoE SR replied on 24th June, 2009 by the letter and promised to involve Ukraine in assessment process in the frame of next steps of evaluation according to EIA National Law and to Espoo Convention in spite of it that notification was legitimately sent and Ukraine did not communicate for four months with no way even threw Espoo contact points, via mail or by telephone.

The proponent delivered to the MoE SR Report about assessment of EMO 3, 4 – elaborated documentation EIA on 14th August 2009. Report has been consequently sent off to the participants of the EIA process according to EIA National Law, it means to the respective authorities of Slovak Republic, affected parishes and has been published on the web site www.enviroportal.sk for comments. All concerned parties could send their statements until 25th September, 2009. The statements have been collected in the MoE SR.

MoE SR as party of origin according to Article 4 Espoo Convention sent by letter No. 1277/2009-3.4/hp from 14th August, 2009 Report on assessment EMO 3, 4 in written form and on the CD in English and Slovak languages to surrounding affected states that have state borders with Slovak Republic: Czech Republic, Poland, Ukraine, Hungary and Austria through contact points and persons according to Espoo Convention. MoE SR asked the affected parties in the letter that was appendix of Report on assessment EMO 3, 4 to state if they intend to take part on the public hearing of assessed activity and if they will ask consultations in the frame of EIA according of Article 5 Espoo Convention that should be organised according to mutual agreement.

Not delivered intention came back from Ukraine to the MoE SR only after three months, on 20th August, 2009. This intention had content as by Ukraine required notification according to Article 3 of Espoo Convention.

We can expect that Ukraine as affected party reacted on participation in process of transboundary assessment after impulse of key staff of MoE SR Mgr. Zizkova, manageress of

Department of environmental impact assessment and RNDr. Niznansky, contact person Espoo Convention. These one also used chance of personal contact with Mr. Buchko who is Ukraine contact person according Espoo Convention on the working group meeting about environmental impact assessment tasks that was held in Geneva in May 2009. Mr. Buchko was warned about Ukrainian inactivity as well as deadlines for their reaction.

Moreover we present that MoE SR received notification about delivery of EIA Report on 25th August, 2009 thereby regarded Ukraine as affected party that is actively involved into transboundary assessment process. In spite of above mentioned fact Ukraine did not react on the delivered EIA Report neither on invitation for public hearing and consultations.

MoE SR received letter from Embassy of Slovak republic in Ukraine on 30th October, 2009 with requirement to send information in the frame of Espoo Convention by the diplomatic way. Although this way was not requested by Ukraine before also, there is no bilateral agreement between both countries specifying such possibility of communication, MoE SR is free to communicate with Ukraine by required way in order to assure operative, flexible and constructive communication in the frame of Espoo Convention.

On 19th November, 2009 was delivered to the minister of environment of Slovak Republic. Mr. Medved, the letter from Ukraine minister of environment protection Mr. Filipczuk, with repeated requirement to deliver notification on the appraisal EMO 3, 4 activity, although Ukraine have received from Slovak Republic as party of origin, EIA Report related to EMO 3, 4 activity. The EIA Report fully respects all notification appurtenances; it means that gave answers on all issues required in the notification. MoE SR regarded such requirement as unfounded.

The MoE SR answered by the letter from 9th December, 2009 wherein informed Ukraine that the process of proposed activity EMO 3, 4 assessment is in the stage when according to EIA National Law the team of experts has been assigned. This one will evaluate in their expertise all appraisal process. The Ukraine has been noticed that assessment process has time limitation according EIA National Law. In spite of that Slovak Republic has again concerned over provide to Ukraine all available information during rest time before the end of proposed EMO 3, 4 activity appraisal. The Slovakian experts were prepared to consult with Ukrainian experts held in Uzgorod on 21st December, 2009.

Consultations were carried out on 21st December, 2009 after intervention Slovak ambassador, Mr. Hamzik to minister of environment protection Mr. Filipczuk.

This consultation meeting finished without any results. Ukraine did not inform the public with proposed activity from 25th August, 2009 when it received EIA Report and also had not comments to the appraised activity even this statement was not noticed to Slovak republic. On the other hand Slovak party did not agree to return appraisal process to the beginning, that means according to the Articles 2 till 7 Espoo Convention. The reason was only such that Slovakian party did not communicate with Ukraine by diplomatic way or there was no notification from Slovak republic, although this was already done.

Allow me express my belief that collaboration between Slovakia and Ukraine will be more flexuous and constructive together with approach of public to the information about proposed activities based on new experiences after consultations between Ukraine and Slovak republic (see above).

I can state that on the present process of transboundary assessment came to the stage when Slovak Republic have taken following steps on the base of agreement with individual affected parties according to Espoo Convention:

1. Public hearing on EMO 3, 4 activities which were held:

- On 18th September, 2009 in Bratislava with participation of laic and technical public from Slovak Republic, Czech Republic, Hungary and Austria.
- On 25th September, 2009 in Vienna with participation of laic and technical public from Slovak Republic, Hungary and Austria.
- On 12th October, 2009 in Esztergom with participation of laic and technical public from Slovak Republic and Hungary.

2. Consultation concerning EMO 3, 4 activity according Article 5 of Espoo Convention:

- On 27th October, 2009 with Hungarian experts held in Mochovce.
- On 24th and 25th November, 2009 with Austrian experts and representatives of individual Austrian countries held in Bratislava.

I remarks that communication between party of origin and affected parties was in progress in the sense of mutual agreement and aspiration to solve issues of environmental protection in accordance with mind of Espoo Convention.

Allow me to inform you that process of EMO 3, 4 activity assessment is in stage, when expertise by international group of experts is in progress. Expertise will take into account all comments, statements of respective authorities of Slovak Republic and the public, results of public hearing and consultations and recommendations for impact mitigation of assessed activity on the environment and public health.

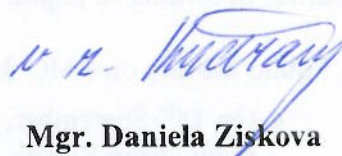
Please find attached to this letter brief replay on the question No. 1 – 16 from your letter. I want to point out that all required information related to above mentioned items were presented in the Preliminary study that has been sent off in the introductory stage of assessment process to all affected parties including Slovak Republic. All necessary data were presented also in EIA Report and in General Executive Summary as part of EIA Report those were sent to affected parishes and parties to be published.

In order to obtain overview about affected parties information methods the copy of accompanying letters to the affected parties (the accompanying letters sent off to Ukraine to the preliminary study, to the public hearing and to the EIA Report are attached as example) and full text of EIA report in written form in Slovak language and General Executive Summary in English language are attached to this letter. The EIA report including all Appendixes and General Executive Summary in English language in electronic form on CD are also attached.

At the end, allow me note, that environmental impact assessment process should be like mirror of environment, mutual communication and collaboration and there is no place for other interest like political or economic. We hope that something like this opinion is also on Ukrainian side. All affected parties, some of them highly environmental sensitive, e. g. Austria and Hungary, have had in environmental impact assessment process of proposed

activity EMO 3, 4 with party of origin, Slovak republic, excessively correct, professional and human relations underlined with close collaboration and communication.

Yours sincerely



Mgr. Daniela Ziskova
Director of the Department of Environmental
Impact Evaluation and Assessment

Enclosures: under text; all of them will be send separately in package by post

Co: Mr. Mathias Sauer, Chair of Implementation Committe Convention on Environmental
Impact Assessment in a Transboundary Context
Federal Ministry for the Environment Nature Conservation & Nuclear Safety,
Alexander str. 3, D-101178 Berlin Germany

Enclosure to the letter No. 1277/2009-3.4/hp

Reaction to the questions No. 1 - 16

1. NATURE OF PROPOSAL ACTIVITY

Nature of proposal activity is generation of the electricity.

2. SCOPE OF PLANNED ACTIVITY.

Main activity is electricity generation and peripheral activities (connected to the generation) are consumption of water, releases of both non radioactive and radioactive substances to the atmosphere and to the surface water and formation of both non radioactive and radioactive wastes.

3. SCALE OF PROPOSED ACTIVITY

For electricity generation will be used two reactor units of WWER 440/213 size. Thermal power each of these one is 1 375 MW and electric output is 440 MW with expected increase up to 471 MW.

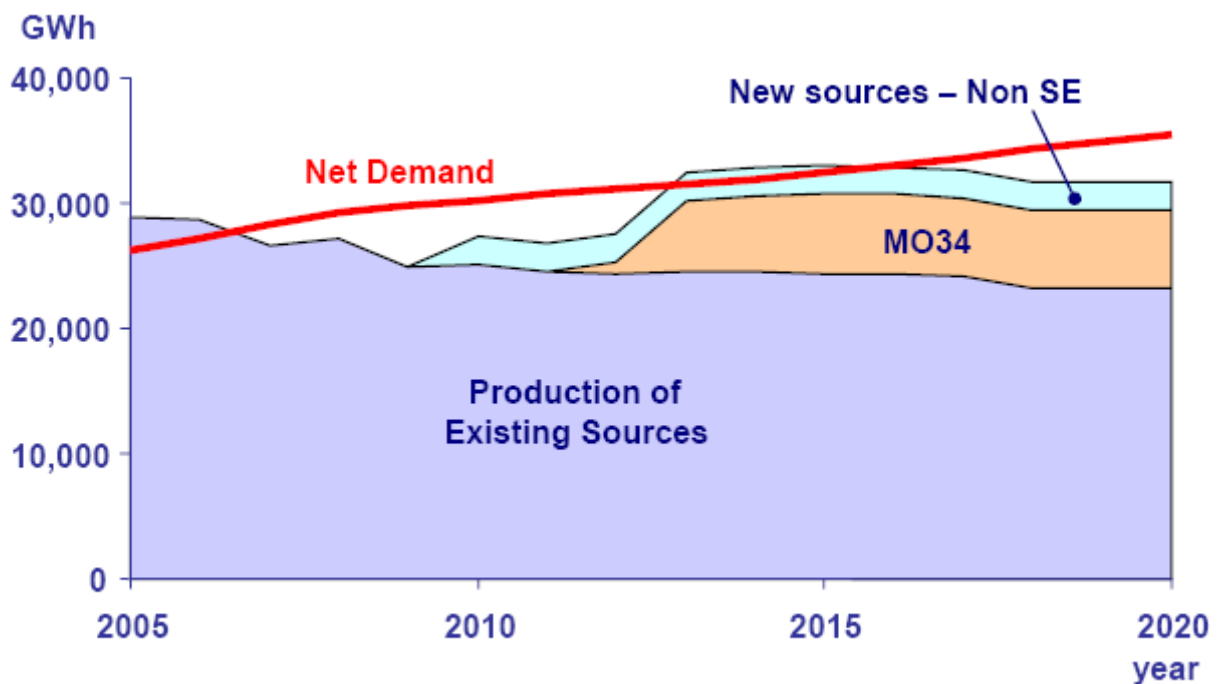
4. DESCRIPTION OF PURPOSE OF PROPOSED ACTIVITY

The aim of the project is to commission and operate Units 3 and 4 of Mochovce NPP, already authorized for their completion, in order to produce the required base load electric energy that is needed to cover the significant gap between demand and supply of electric energy on the Slovak network.

The Slovak republic has been an exporter of electricity for 7 years (2000 – 2006). The shutdown of two units of Bohunice Nuclear Power Plant V1 reduces the total capacity of NPPs by 880 MW. At present V1 has already been shutdown.

The outlook of net electricity generation from 2007 to 2020 based on forecast development of installed capacity in the Slovak Republic is shown in next figure

Net Electricity Demand Forecast in Slovakia



5. SPATIAL AND TEMPORAL BOUNDARIES

Environmental spatial boundaries reasonably expected to be directly/indirectly affected

Environmental component	Environment that can reasonably be expected to be directly or indirectly affected	Spatial boundaries
Atmospheric Environment	• Local atmosphere	<i>Local Study Area</i>
	• Human health, human health workers and members of the public	<i>Local Study Area</i>
	• Pathway to terrestrial environment VECs quality	<i>Local Study Area</i>
	• Pathway to aquatic environment VECs	<i>Local Study Area</i>
Geology and Seismicity	No interaction between project activities and component	
Hydrology and Hydrogeology	• Aquatic temperature	<i>Local Study Area</i>
	• Aquatic quality	<i>Regional Study Area</i>
	• Human health and members of the public	<i>Regional Study Area</i>
	• Pathway to aquatic environment VECs	<i>Regional Study Area</i>
Terrestrial Environment	• Vegetation communities and specie	<i>Local Study Area</i>
	• Wildlife habitat	<i>Local Study Area</i>
	• Pathway to aquatic environment VECs	<i>Local Study Area</i>
Land Use and Cultural and Historical Heritage	• Land resources	<i>Regional Study Area</i>
	• Land use	<i>Site Study Area</i>
	• Pathway to socio-economic conditions VECs	<i>Regional Study Area</i>
Economic and Demographic Conditions	• Population and employment	<i>Regional Study Area</i>
	• Economic activities	<i>Regional Study Area</i>
	• Municipal Finance, infrastructure, services	<i>Regional Study Area</i>

VECs - valued ecosystem components

The temporal boundaries for the assessment define the time periods for which likely environmental effects of the Project are considered. For purposes of EIA study the Project life-cycle.

6. DESCRIPTION OF THE LOCATION

Units 3 and 4 of Mochovce NPP are located in Central Europe in the south-eastern region of Slovakia on the western boundary of the district of Levice, close to the operating EMO12 NPP. The MO34 site lies on the south-western edge of the Kozmálovské vršky (hills) in the Hronskej pahorkatina (uplands). The elevation of the terrain is between 200 and 250 m above sea level. The coordinates of the centre of the Mochovce NPP protection zone are:

- longitude 18° 27' 35'';
- latitude 48° 15' 35''.

From the point of view of the terrestrial and administrative arrangement of Slovakia the MO34 site lies in the eastern part of the Nitra region in the north-western corner of the district of Levice, close to the boundary with the Zlaté Moravce region, approximately 12 km from the municipality of Levice, which is the largest town in a 20 km radius of the NPP. Other municipalities are Tlmače which is 7 km away, Zlaté Moravce 14 km away, Nitra 27 km away and the outskirts of Slovakia's capital city of Bratislava are approximately 90 km to the west of MO34, i.e. 120 km by public roads. Budapest and Vienna are the closest cities with over 1 million inhabitants in a 200 km radius of MO34. The outskirts of Budapest are approximately 85 km to the southeast of MO34 and the outskirts of Vienna are about 145 km to the southwest. Other large agglomerations with more than 1 million inhabitants are Varšava to the north, Záhreb to the south, Kyjev to the east, and Prague to the west.

Slovakia shares its borders with five other countries: Hungary, Austria, the Czech Republic, Poland and the Ukraine. The approximate distance of the MO34 site from the individual state borders is included in the table.

Distance from MO34 to individual state borders

Country	Distance from MO34 to state border
Hungary	37 km
Austria	110 km
Czech Republic	85 km
Poland	130 km
Ukraine	270 km

The closest state boundary is the border with Hungary. The Ipeľ River forms a natural boundary with Hungary in a 50 km radius of the site with the exception of the boundary between the municipalities of Šahy and Ipeľský Sokolec. The closest NPP is in Jaslovské Bohunice which lies approximately 64 km from MO34.

7. RATIONALE FOR LOCATION OF PROPOSED ACTIVITY

Mochovce NPP was designed and its construction has been launched and realized as a four-unit NPP with common civil structures and technological components to be shared by all the four units. That means that the site of Mochovce NPP has been conceived to host four units and all the environmental evaluations (which were necessary to obtain the placement and construction permits) have been carried out always taking into account the likely impacts and the needs of four units.

From the point of view of water needs, waste production, atmospheric releases and liquid discharges, electric grid, land use, infrastructures, roads, railway and all the external services, the Mochovce site is fully capable of bearing Units 3 and 4.

Moreover, due to the advanced stage of completion of Units 3 and 4, Mochovce site represents a one off opportunity to cover in a short time the significant gap between demand and supply of electric energy on the Slovak network.

8. TIME FRAME FOR PROPOSED ACTIVITY

Construction works for MO34 started in 1986 with the laying of the foundations of the main buildings (reactor building, longitudinal electrical building, basement of transformers, cooling towers, vent stack) and continued up to 1992. In 1992 construction works were suspended due to insufficient funds. At that time the civil parts were up to 70% complete and the machinery parts up to 30% complete. The basic technological equipment like the reactor vessel, the steam generators, the pressurizer, the safety systems and the main parts of the turbines were delivered to the site and partially installed.

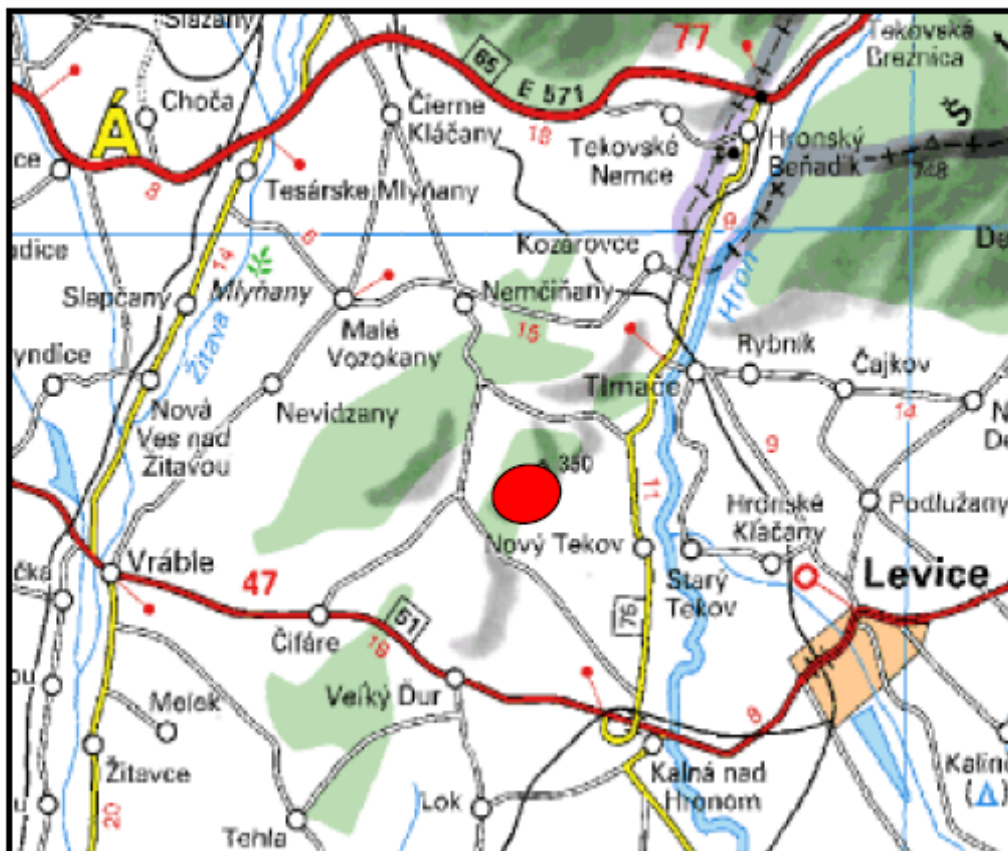
From 1992 to 2000 maintenance and conservation of suspended equipment and components and of the civil structures were carried out by the original main suppliers and constructors. From 2000 to-date the preservation and protection works have been performed on the basis of programs following technical guidelines of the IAEA and approved by the Nuclear Regulator Authority (ÚJD) of the Slovak Republic.

Proposed time-scale for the start and completion of the construction work and operation of the proposed activities

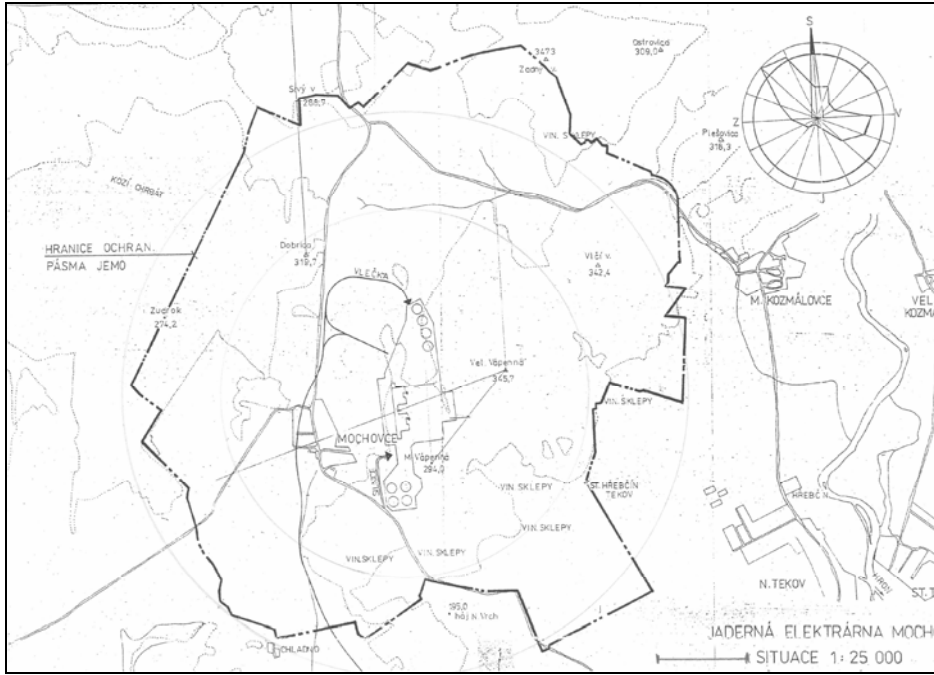
Activity		Date
Beginning of construction:		1986
End of construction:	Unit 3	February 2012
	Unit 4	July 2012
Start of commissioning activities		August '11
Fuel loading on	Unit 3	February '12
Beginning of operations:	Unit 3	November 2012
	Unit 4	June 2013
End of operations:	Unit 3	November 2052
	Unit 4	June 2053

9. MAPS AND OTHER PICTORIAL DOCUMENTS.

General location of the site



Exclusion Area Border (Protection Zone) of Mochovce NPP



Site Study Area, Local Study and Area Regional Study Area



10. SCOPE OF ASSESSMENT

In order to perform an environmental appraisal of feasible alternatives to operation of MO34, an analysis has therefore been made of the likely environmental impacts of construction and operation of:

- a 450 MW CCGT power plant;
- a 450 MW CFB lignite power plant;

to assure a production of electric energy corresponding to the production of MO34.

The assessment that were performed has necessarily been undertaken without a detailed specification for such plants and, indeed, in the absence of a well-defined potential location. Accordingly, the assessment is generic in nature and should be interpreted only as being indicative of the impacts normally associated with those plants.

The primary impacts associated with the plant are: land requirements; water consumption; combustion product emissions; solid wastes; liquid effluents; waste heat; noise.

The set of indicators have been used for comparison of the alternatives s shown in the table:

<i>Environmental indicators</i>	<i>Economic indicators</i>	<i>Social indicators</i>
Activity of liquid & gaseous effluents (Bq/kWh)	Capital cost (\$/kWe)	Dose to the public (Sv/kWh)
Volume of solid waste (m ³ /kWh)	Marginal cost (\$/kWh)	Employment (man/kWh)
Activity of solid waste (Bq/kWh)		
Fuel use (tU/kWh)		Education (number of university courses)

(Source: NEA, *Nuclear Energy in a Sustainable Development Perspective*, 2000)

Assessment of anticipated area development if the proposed activity was not undertaken

The site location for the construction of the four units at Mochovce was determined based on a land use decision and the subsequent construction permit. Mochovce NPP was designed and its construction has been launched and realized as a four-unit NPP with common technological components.

The area is not expected to develop in a way other than how it will be with Units 3 and 4, due to the presence of Units 1 and 2 that prevent the area from developing in any other way.

11. EXPECTED ENVIRONMENTAL IMPACTS OF PROPOSED ACTIVITY

For non radiological parameters, no residual adverse effects were identified in the operations phase for Atmospheric Environment, Geology and Seismicity, Hydrology, Hydrogeology and Aquatic Environment.

For non radiological parameters, a minor adverse effect was identified in the operations phase for the radiation exposure to workers and members of the public. The predicted doses are well below regulatory limits. For example the predicted dose to members of the public as a result of the project is less than 0.1% of Slovak and international standards.

Taking into account the findings of the present EIA Report, including the identified mitigation measures, the project is not likely to have any significant adverse effect on the environment. Indeed, the project will result in a number of positive effects through reducing greenhouse gases emissions (if compared to conventional power plants) and providing a safe supply of electricity and economic benefits to the immediate and surrounding communities.

For the evaluation of the impact of proposed activities on human health, the number of fatal tumours was selected as statistical indicators. Results from the evaluation is likely that the operation of EMO12 does not present a negative impact on the health of the inhabitants of the monitored district of Levice.

Summary of residual adverse/beneficial effects of the Project and their significance

Residual adverse effect	Significance
<i>Atmospheric Environment</i>	
<i>Non radiological parameters</i>	
Change in local climate due to predict increased of the amount of heat discharged to atmosphere	No adverse effect
<i>Radiological parameters</i>	
Increase in the average individual radiation doses to workers and to members of the public as a result of the Completion of MO34	Minor adverse effect (not significant)
<i>Hydrology and Groundwater including Aquatic Environment</i>	
<i>Non radiological parameters</i>	
Chemical and physical effect	No adverse effect
<i>Radiological parameters</i>	
Increase in the average individual radiation doses to workers and to members of the public as a result of the Completion of MO34	Minor adverse effect (not significant)
Increase of background tritium concentration in surface water and groundwater	
<i>Socio-economic Condition</i>	
Beneficial effect: increase economic activity trough process expenditures and pay-roll.	
Beneficial effect: increase community stability through existence of a long term power plant with employment opportunities	Beneficial effect

12. INPUTS

- Land
Further development of the Mochovce NPP, Units 3 and 4, will not require additional land other than the one already authorized. Most of the civil works (70%) are completed and are currently not used. Once the MO34 is in operation, besides the dedicated structures and systems, it will use also the common structures and systems shared with EMO12.
- Surface water
Water for the operation of Mochovce NPP is extracted from the water reservoir at Veľké Kozmálovce on the Hron River approximately 5 km from the site.

The total amount of surface water extracted from the source at Velké Kozmálovce is in conformity with the yearly limits permitted by the water authorities.

- Groundwater extraction

Groundwater is extracted from two wells, HMG-1 and HMG-1/A, owned by SE in Červený Hrádok approximately 8 km away from Mochovce NPP. The maximum permitted flow rate is 18 l/s for HMG-1 and 15 l/s for HMG-1/A. Groundwater is used for drinking water purposes.

- Raw materials

In a NPP the main consumed resource is fuel (i.e. uranium). Chemicals will be used for operation and maintenance of the mechanical and other technological equipment (sealing material, lubricants, protective paints, cleaning agents etc.) and for operation and maintenance of buildings etc. The expected consumption of these materials ranges from several tens of kilograms to several hundred tons (e.g. material for reconstruction and maintenance of buildings etc.). Based on a qualified estimation the total consumption of material should range between 20 – 25 thousand tons per year.

Other raw materials needed for the operation and maintenance of MO34 are either environmentally neutral materials (e.g. protective paints) or are categorized after use as being in the waste category O (paper, wood etc.).

- Energy sources

The main energy source in a NPP derives from fission of fuel elements. The consumption of electrical energy of MO34 will be ensured by the production of the plant itself.

A backup source of electrical energy is a diesel generator station whose fuel is diesel. Diesel units ensure energy supply to all safety systems in case of loss of off-site power. The diesel generators are usually in cold stand-by and are periodically tested to prevent unravelled failures.

- Demands on transport and other infrastructure

Neither new roads nor railways will be needed for completion and operation of MO34. Realization of the proposed activities will not place a greater burden on existing road communications, railway lines or technical infrastructures as far as the operation phase.

- External electrical system

Existing electrical system is already adequate for the operation of all four units and construction of no other electrical line will be required.

OUTPUTS

1. Air

Sources of air pollution may be divided in two categories: aerosols of radionuclides produced by the operation of the nuclear reactor and non radioactive effluents deriving from combustion processes.

Non radioactive airborne effluents are connected with a natural gas source (auxiliary start-up and site security boiler) and a diesel source (diesel generators).

Radioactive airborne effluents is created by the de-aeration system of the primary circuit; the remaining part derives from possible leakages from the primary circuit (or from other systems containing radioactive material) and from the radioactive liquid waste large capacity tanks. The air from these compartments is led to the air cleaning system whose aim is to ensure the limitation of the releases of the gaseous radioactive substances (airborne particulates, noble gases and Iodine isotopes) into living environment.

2. Wastewater

The main wastewater source discharged to river can be divided into:

- wastewater without radionuclides comprising cooling tower blow downs and water coming from the regeneration of resins for demineralised water production; and
- wastewater with presence of low activity radionuclides, constituted by condensation of vapour coming from radioactive liquid treatment.

Besides that small amounts of heat can be released into river through cooling tower blow down.

3. WASTES

Non-radioactive waste

Radioactive waste (spent nuclear fuel is not considered as RAW)

- gaseous;
- liquid;
- solid.

In whatever state it is, the radioactive waste are subject of treatment to be taken by the operator as collection, sorting, pre-treatment, temporary storage, final processing, conditioning and final disposal or release to the environment if they meet criteria.

4. NOISE AND VIBRATIONS

5. RADIATION

During the operation of the reactor, gamma and neutron radiation is generated. Other sources of radiation are the reactor's cooling medium in the primary circuit, active parts of the reactor AZ, spent fuel assemblies deposited at the bottom on the spent fuel pool and all types of RAW that are collected at the site and temporarily stored therein.

13. TRAN BOUNDARY IMPACTS

In the EIA report, three different areas have been selected, which can reasonably be expected to be directly or indirectly affected by the project, or which may be relevant to the assessment of cumulative effects and the effects from future operation of the facility on the environment:

- *Site Study Area*: this area (set by Decree of Region Health Officer No. H-IV-2370/79 from 15.10.1979), centred on the plant site with a radius of about 3 km, includes facilities, buildings and infrastructure at the Mochovce site, including the licensed buffer zones (Protection zone) for the site on the land;
- *Local Study Area*: this area is defined as that area existing outside the site study area boundary, where there is a potential for impacts in the unlikely events of abnormal operating conditions. The Local Study Area has a radius of 10 km centred on the Mochovce site;
- *Regional Study Area*: this area is defined as that conservative area within which there is the potential for cumulative and social-economic effects and it approximately corresponds with a 50 km radius area around the site.

The size and configuration of the applied study areas change according to the environmental component taken into account.

Even if some of environmental effects of the project, including malfunctions or accidents and some cumulative environmental effects are likely to involve the Local Study Area or the Regional Study Area, the main additional environmental effects that may occur during operational phase are likely to be observed within the Site Study Area (Protection zone).

The boundaries of the regional study area have been set taking into consideration general experience on environmental impact study of power plant facilities and on the basis of the results of monitoring system set up for the whole site of Mochovce.

The impact of the proposed activity on the neighbouring countries has been evaluated in the EIA Report, and specifically for the radiological consequences those impacts are described in part C, section III, chapter 1.5.3. In particular two countries have been evaluated in detail: Hungary and Austria. The criteria for the choice of these two countries are the vicinity to the proposed activity, the orographic profile between the proposed activity and the country border and the hydrology of the area (Hungary is downstream the river Hron). The results of the assessment show that the radiological impact of the proposed activity in terms of doses to inhabitants of these countries is negligible (4.3×10^{-9} Sv/year for Hungary and 1×10^{-11} Sv/year for Austria) when compared to regulatory limits for doses to population and to the natural background (2.4×10^{-3} Sv/year, source UNSCEAR). All the other countries are not influenced by the river Hron and are more distant from the proposed activity.

Radiological impacts of the proposed activity on neighbouring countries and the results of the assessment is that these impacts are negligible, practically equal to zero from a radiological and health physics point of view.

14. PROPOSED MITIGATION MEASURES

- Physical-planning measures

The exclusion area (Protection Zone) for Mochovce NPP was determined by Decree of Region Health Officer; it is a zone in which permanent residence is prohibited. The average distance of exclusion area boundary to Mochovce NPP is about 3 km

- Technical measures – installed protection and safeguard systems
- Technological measures – operation instruction and operation within limits and conditions
- Organizational and operational measures during normal operation

An external laboratory of radiation control was built in Levice in connection with the adopted radiation protection measures of the Mochovce NPP to monitor the radioactivity of the environment in the surroundings of the Mochovce NPP. It began its activities in 1986, about the time of the Chernobyl accident, with the aim of obtaining to data prior to the NPP being put into operation.

In line with the monitoring plan for radiation control of the Mochovce NPP surroundings, EMO/2NA-052.01-02, the Mochovce NPP controls the radiological influences on the environment and population.

- Measures in case of accidents – Emergency Plans

Off-Site Emergency Plans. The “Plan of Population Protection in case of Radiation Accident in Nuclear Power Facilities” is the document based on which the off-site emergency response is managed. It defines the organizations involved in regional emergency preparedness and defines duties of the individual subjects.

The On-site Emergency Plan is dealing by the emergency events related to radiological hazard to the personnel within the territory of nuclear facility and is linked to the Plans of Public Protection in the surroundings of nuclear facility. The On-site Emergency Plan shall include measures in case of emergency events involving combination of non-nuclear and nuclear hazards.

Emergency Response Organization is establishment and arrangement of departments and personnel in licence holder’s organizational structure execution to ensure execution of the On-site Emergency Plan.

ERO has available the emergency response facilities which are a part of the emergency preparedness system are specifically adopted and equipped to support the activities of the personnel involved in the organization of on-site or off-site emergency response.

- Protective measures

The aim of protective measures is protection of the plant personnel and persons legally moving on NPP territory; protection of reactor unit; Protection of population living in the plant surroundings; Protection of environment.

16. Authority responsible for coordinating activities relating to EIA and if different, decision making authority
Authority responsible for coordinating activities relating to EIA is Ministry of Environment of Slovak Republic.
Decision making authority is Nuclear regulatory authority of Slovak Republic



MINISTERSTVO ŽIVOTNÉHO PROSTREDIA
SLOVENSKEJ REPUBLIKY
812 35 BRATISLAVA, NÁMESTIE LUDOVÍTA ŠTÚRA 1

Mr. Volodymyr A. BUCHKO
Deputy Direktor
Legal Department
Ministry of Environmental Protection
Uritskogo street 35
03035 Kiev

Your ref. / date

Our ref.
1277/2009-3.4/hp

Contact/extension
Ponecová/0905 682024

Bratislava
20. 02. 2009

Subject: **Nuclear power plant in Mochovce VVER 4 x 440MW Stage 3**
– notice

In accordance with the provisions of the Convention on Environmental Impact Assessment (EIA) in a Transboundary Context (the Espoo (EIA) Convention) and Council Directive 97/11/EC, we hereby inform you that the developer **Slovenské elektrárne, a. s. Blocks 3 and 4 of the Nuclear power plant in Mochovce, 935 39 Mochovce**, has submitted to the Ministry of Environment of the Slovak Republic (hereinafter referred to as the "MoE") in accordance with Act No. 24/2006 Z. z. on environmental impact assessment and the amendment of certain acts (hereinafter referred to as the "Act") a proposal for the project **Nuclear power plant in Mochovce VVER 4 x 440MW Stage 3** (hereinafter referred to as "the proposed development").

According to the conditions laid down in point 2 of annex no. 13 of the Act relating to thermal power plants and other combustion facilities with a thermal capacity of 300 MW or more and nuclear power plants and other nuclear reactors (other than research facilities for the production and conversion of the parameters of the proposed development of fissile and enriched materials whose maximum thermal capacity does not exceed 1 kW of permanent thermal load), the proposed development requires international environmental assessment for transboundary impacts.

We enclose the plans for the development prepared in accordance with article 9 of the Act in Slovak language and an executive summary of the plans in English in both paper and electronic format.

The competent authority with regard to development consent is the Nuclear Regulatory Authority of the Slovak Republic, which will grant consent for the putting into operation of the nuclear facility and subsequently consent for the operation of the nuclear facility in accordance

with Act No. 541/2004 on the peaceful use of nuclear energy and the amendment of certain acts.

We are sending you this information pursuant to the provisions of the Espoo (EIA) Convention, article 7 of Council Directive 85/337/EEC on the assessment of the effects of certain public and private projects on the environment and sections 40 to 52 of Act No. 24/2006 Z. z. on environmental impact assessment and the amendment of certain acts and hereby request your statement on whether you intend to participate in the process for environmental impact assessment in a transboundary context relating to the proposed development.

We ask that you deliver your response or standpoint stating whether you, as an affected party, intend to participate in the assessment of transboundary impact to the contact person for the party of origin within 21 days.

The contact person for the party of origin is: RNDr. Gabriel N i ž ň a n s k ý , environmental impact assessment department, Ministry of Environment of the Slovak Republic, Námestie Ľ. Štúra 1, 812 35 Bratislava, Slovakia, tel.: +421905680873, fax: 02/64369945, mail: niznansky.gabriel@enviro.gov.sk.

Yours sincerely



Mgr. Daniela Ž i š k o v á
authorised director
environmental impact assessment department

Enclosures: plans 1x
information in English 1x
CD 1x

MINISTERSTVO ŽIVOTNÉHO PROSTREDIA
SLOVENSKEJ REPUBLIKY

Sekcia kvality životného prostredia

Odbor hodnotenia a posudzovania vplyvov na životné prostredie

Námestie Ľudovíta Štúra 1, 812 35 Bratislava

• Mrs. Olga MARUSHEVSKA •
Head of Department
International Cooperation
Department
Ministry of Environmental Protection
Uritskogo street, building 35,
03035 K Y I V
UKRAINE •

Your letter No. / of the day	Our Ref. No.	Person in charge/☎	Bratislava
	1277/2009-3.4/hp	Dipl. Ing. Ponecová +421 905 682 024	14. 08. 2009

Re:

„Nuclear Power Plant Mochovce VVER 4 x 440MW Building3“
– Assessment Report sent

On 14 August 2009 the proposer (**Slovenské elektrárne, a. s., závod 3. a 4. blok Elektrárne Mochovce, 935 39 Mochovce**) submitted the following report to the Ministry of Environment of the Slovak Republic, Environmental Impact Assessment Department (hereinafter “*MOE SR*”): “**Nuclear power plant Mochovce, VVER 4 x 440MW Building 3**“ (hereinafter “*Assessment Report*”). The Assessment Report has been submitted according to Article 31 of the Assessment Act.

By its parameters according to Article 2 section 2 of the Convention on Environmental Impact Assessment in a Transboundary Context in accordance with the Directive 85/997/EEC and the Directive 97/11/EC (hereinafter “*ESPOO Convention*”), and in the relation with the proposed activities that are included in its Annex 1, the proposed activity is classified in point 2. Thermal power stations and other combustion installations with a heat output of 300 megawatts or more and nuclear power stations and other nuclear reactors (except research installations for the production and conversion of fissionable and fertile materials, whose maximum power does not exceed 1 kilowatt continuous thermal load). Therefore, the

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proposed activity belongs to those activities that are liable to obligatory international assessment from the point of view of their environmental impact in a transboundary context.

Nuclear Regulatory Authority of the Slovak Republic (Úrad jadrového dozoru Slovenskej republiky) shall be the approving authority for the proposed activity. The Nuclear Regulatory Authority of the Slovak Republic shall issue approval of commissioning of the nuclear facility according to Act#541/2004 on the peaceful use of nuclear energy and on the amendments of some acts. Consequently the Nuclear Regulatory Authority of the Slovak Republic shall issue approval of operation of the nuclear facility.

As the party of origin, MESP is submitting you compilation of the EIA Report according to Article 45 of the Act#24/2006 on the environmental impact assessment and on the amendments of some acts (hereinafter "*The Assessment Act*"), as well as on the basis of application of Article 4 of the ESPOO Convention.

Within the framework of the legislative framework of the Slovak Republic, the Report is being concurrently sent by the MOE SR to all impacted authorities, branch authorities, impacted municipalities, and to public, to the end of expression of their respective standpoints to the proposed activity. During the above public observations procedure of the Assessment Act (i.e., national legislative provides for the period of 30 days after the publication of the Assessment Act by the impacted municipalities in the way that is usual in the locality, as well as after publication on the website www.enwiportal.sk) the proposer is obliged to ensure public discussion of the proposed activity in co-operation with the impacted municipalities. Please, inform us, whether you wish to participate on the public discussion on the territory of the Slovak Republic. We shall inform you in time on the venue and time of the public discussion.

According to Article 5 of the ESPOO Convention and the Council Directive 85/337/EEC on the assessment of the effects of certain public and private projects on the environment and Article 47 of the Assessment Act, we are taking the freedom of asking you for your standpoint to the question, whether we intend to ask for consultations within the framework of the process of the environmental impact assessment of the proposed activity in a transboundary context. The consultations would take place according to mutual agreement of the party of origin and the impacted party.

Please, find enclosed the following information:

1. Complete Assessment Report in the Slovak language, as a hardcopy and on an electronic data medium.
2. Complete Assessment Report in the English language, as a hardcopy and on an electronic data medium.

Please, deliver your standpoint (i.e., whether you wish to participate on the public discussion within the framework of the process of proposed activity assessment or not, and whether you require consultations to the proposed activity or not) to the address of the contact person within 15 days.

The party of origin has the following contact person:: **RNDr. Gabriel Nižňanský**, odbor hodnotenia a posudzovania vplyvov na životné prostredie, Ministerstvo životného prostredia Slovenskej republiky, Námestie Ľudovíta Štúra 1, 812 35 Bratislava, Slovenská republika, tel.:+421905680873, fax: +421264369945, mail: niznansky.gabriel@enviro.gov.sk.

Yours truly



Mgr. Daniela Žišková
Director of the Environmental Impact Assessment
Department

Enclosures: See the text

CO:

Mr. Volodymyr A. BUCHKO
Deputy Direktor
Legal Department
Ministry of Environmental Protection
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03035 K i e v
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**MINISTRY OF ENVIRONMENT
OF THE SLOVAK REPUBLIC**
Section of the Quality of the Environment
Department of Environmental Impact Evaluation and Assessment
Námestie Ľudovíta Štúra 1, 812 35 Bratislava

•
Mrs. Olga MARUSHEVSKA
Head of Department
International Cooperation Department
Ministry of Environmental Protection
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•

Your letter No. / from the day	Our Ref. No.	Person in charge/☎	In Bratislava
	1277/2009-3.4/hp	Ing. Ponecová +421 905 682 024	28. 08. 2009

Subject

Mochovce Nuclear Power Plant VVER 4 x 440 MW, Project No. 3 – invitation for public hearing

We are informing you, that on the ground of notification from affected municipalities and the proponent, **Slovenské elektrárne, a.s., závod 3. a 4. blok Elektrárne Mochovce, 935 39 Mochovce**, Slovak Republic as the party of the origin, is organizing the public hearing to the environmental impact statement of the activity “**Mochovce Nuclear Power Plant VVER 4 x 440 MW, Project No. 3**”, at which are we inviting you, in compliance with Espoo Convention and Directive No. 97/11/EC and Directive No. 2003/35/EC amending Directive No. 85/337/EEC.

Public hearing will be held in Bratislava at the address: **Účelové zariadenie Hotel Bôrik, Bôrik 15, 814 07 Bratislava**, on the **18th September 2009** at **14⁰⁰ hour**.

Best regards



Mgr. Daniela Žišková
Director of the Department of Environmental
Impact Evaluation and Assessment

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