



July, 2009

Scope of Assessment (No. 1277/2009 - 3.4/hp), issued by the Ministry of Environment of the Slovak Republic on 29 May 2009).

ANNEX 0.6



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SCOPE OF ASSESSMENT

Determined pursuant to § 30 of the Act 24/2006 Coll. on environmental impact assessment and on changes and amendments to certain laws, for assessment of impacts of the proposed activity: **“Nuclear Power Plant Mochovce VVER 4 x 440 MW – 3rd civil engineering project”**

The Proponent, **Slovenské elektrárne, a. s., plant Units 3&4 of Mochovce Power Plant, 935 39 Mochovce**, has submitted to the Ministry of Environment of SR, dept. of assessment and evaluation of impacts (hereinafter only as the “MŽP SR”) the Intent on the activity of **“Nuclear Power Plant Mochovce VVER 4 x 440 MW – 3rd Construction”** (hereinafter only as “NPP MO 3&4”) for assessment pursuant to the Act No. 24/2006 Coll., on environmental impact assessment and on changes and amendments to certain laws.

The Intent of the proposed activity represents assessment of impacts of realization of a nuclear complex and commissioning of two units of VVER 4 x 440 MW type with the aim to generate electricity to cover the electricity supplies for individual customers. The Intent of the proposed activity is in compliance with the energy policy of the Slovak Republic.

The purpose of the proposed activity is in particular:

- To secure high level of environmental protection and protection of public health;
- To establish, describe and evaluate direct and indirect impacts of the proposed activity on the environment and on the health of people;
- To explain and to compare advantages and disadvantages of the proposed activity, including its comparison **with zero alternative**;
- To determine measures, which shall prevent pollution of the environment, mitigate the environmental pollution or prevent damaging the environment;
- To acquire professional supporting documentation for issuing the decision on the permit of activity according to special regulations.

Nominal thermal output of NPP EMO 3&4 represents 1,375 MW.

The complex of NPP Mochovce – dual unit of NPP MO 3& 4 is located in the cadastre of municipalities of Nový Tekov, Kalná nad Hronom, district of Levice, Nitra region.

The suburban area of the Capital of SR Bratislava is approximately 90 km west from the NPP MO 3&4, i.e. approx. 120 km traveling by road from the proposed activity. The suburban area of Budapest, which is the Capital of the Republic of Hungary, is located approx. 85 km south-east from NPP MO 3&4 and the proposed activity. The suburban area of Vienna, which is the Capital of Republic of Austria, is located cca 145 km south-west from NPP MO 3& 4 as the proposed activity. The Czech Republic is cca 85 km from the proposed activity; Republic of Poland is cca 130 km from the proposed activity. Republic of Ukraine is 270 km from the proposed activity.

The proposed activity meets the criteria pursuant to § 18 par. 1 of the Act No. 24/2006 Coll. (hereinafter only as the “Act”) and according to its “Annex 8” it is included under chapter 2: Energy industry, item No. 4. Nuclear Power Plants and other installations including nuclear reactors, including their decommissioning and liquidation, section “A”, and therefore is subject to obligatory assessment.

The Intent of the proposed activity was submitted as zero alternative and one option of the solution, as MŽP SR on the basis of justified application of the Proponent pursuant to § 22 par. 7 of Act No. 24/2006 Coll. I. by letter No. 7451/2008-3.4/hp – 3, 4 dated 31 July 2008 has abandon the request for an alternative solution to the intended activity.

The proposed activity pursuant to Annex 13 to Act No. 24/2006 Coll. belongs to the activities, which are subject to obligatory international assessment from the view of their impact on the environment, exceeding the state borders. On the basis of this fact MŽP SR, as the party of origin, upon delivery of the Intent and that is without undue delay, informed about the proposed activity, pursuant to par. 1 § 40 of Act and in compliance with the Article 3 of the Convention on Environmental Impact Assessment (hereinafter only as the “Espoo Convention”), the Council Directive 97/11/ES, as well as in compliance with the Agreement between the Government of the Slovak Republic and the Government of the Republic of Austria, to the following contact points of the affected parties:

- Ministry of Environment of the Czech Republic;
- Federal Ministry for Agriculture, Forestry Management, Environment and Water Management of the Republic of Austria;
- Ministry of Environment and Water Management of Republic of Hungary;
- Ministry of Environment of Republic of Poland, and
- Ministry of Environment of Ukraine.

Together with the notification on launching trans-boundary assessment MŽP SR raised a question with the affected parties, whether they intend to take part in the environmental impact assessment procedure on this activity. In connection with this MŽP SR also defined the deadline for delivery of the response to this question.

Affected parties in their response to the notification on launching assessment of the proposed activity have included in the process of verification of potential impacts of the proposed activity on the environment the relevant bodies of state administration, as well as the public. The entire documentation was made available to the public in electronic format during 21 days on the web sites of the above mentioned institutions in compliance with the EIA regulations.

Austria, Republic of Hungary and Republic of Poland, after considering their delivered positions on the proposed project they stated that they cannot exclude significant negative impacts of the submitted Intent on the environment and on the health of people, and for that reason they intend to participate in the procedure of trans-boundary assessment of the proposed activity.

MŽP SR submitted the Intent for taking position pursuant to § 23 par. 1 of the Act to the following involved entities: the *competent authority* (Ministry of Economy of SR, Section of the energy sector), the *permitting authority and the affected municipalities* (Nuclear Regulatory Authority of the Slovak Republic; Municipal Office at Kalna nad Hronom; Municipal Office at Novy Tekov; Municipal Office at Stary Tekov; Municipal Office at Veľky Ďur; Municipal Office Tlmače; Municipal Office at Male Kozmálovce;) *affected authorities* (Public Health Authority of the Slovak Republic; National Labour Inspectorate of SR, dept. of labour inspection in the nuclear energy sector; District Environmental Authority Levice; Regional Environmental Authority Nitra; Office of the Nitra self-governing region; Ministry of Interior of the Slovak Republic, section of crisis management and civil protection; Presidium of the Fire-Brigade and the Rescue Service of the Ministry of Interior of the Slovak Republic; Regional Office of public health with its seat in Levice; Aviation Authority of the Ministry of Interior of SR, Slovak Water Management Enterprise, š. p., branch office Banska Bystrica; Labour Inspectorate Nitra; Technical Inspection, a.s., Bratislava; Office for Regulation of Railway Traffic Bratislava; District Authority for road traffic and road networks Levice; Regional Land Authority Nitra; District Authority, dept. of civil defense and crisis management Nitra;).

The Intent was also sent for taking the position by the *Slovak Environmental Agency Banska Bystrica*, *Ministry of Environment SR*, section of waters and energy sources; *Ministry of Environment of SR*, dept. of environmental risks management.

Pursuant to § 23 par. 4 of Act No. 24/2006 Coll. I. MŽP SR received **twenty one** positions on the Intent from the above listed entities to the assessment procedure. Several positions have been concurrent without comments or recommendations to the proposed activity.

In some of the positions there have been several concrete comments and requests, the fulfillment of which was the condition for implementing the proposed activity, but also a request to elaborate an assessment report.

The following positions on the proposed activity have been delivered from the public:

1. *Ing. Jozef Križan, Adlerova 21, 04 022 Košice* – he does not recommend realization of the activities from the technical, technological, environmental and economical points of view;
2. *Spoločnosť priateľov Slatinky, Poštová 6, 917 01 Trnava* – to assess impacts of NPP MO 3&4 on the flow rates of the river, as well as the quality of water in the river Hron below VN Veľké Kozmálovce;
3. *Združenie Slatinka, P. O. BOX 67, Ul. Bela IV. č. 6, 960 01 Zvolen* – to assess impacts of NPP MO 3&4 on the flow rates of the river, as well as on the quality of water in the river Hron below VN Veľké Kozmálovce;
4. *GREENPEACE SLOVENSKO, Nám. SNP 35, P.O. Box 58, 814 99 Bratislava 1:*
 - To complement probability assessments for occurrence of an accident with leakage of radioactivity to the environment, measures to prevent it and potential impacts.
 - To complement radwaste management for radwaste produced by NPP MO 3&4.
 - Assessment of impact of the operation of NPP MO 3& 4 on the flow rate of the river Hron
5. *VLK VÝCHODNÉ KARPATY, Ul. Kpt. Nálepku 102, 069 01 Snina;*
6. *Comments from five citizens of the Slovak Republic:*

To assess, whether the operation of the nuclear power plant NPP MO 3&4 would have negative impact on the flow rates and the quality of water in the river Hron below VN Veľké Kozmálovce or not.

If the assessment procedure proves negative impact of operation of the proposed activity on the ecosystem of Hron as a result of low residual flows caused by water offtake, there must be measures to eliminate such negative influences defined as forced investments relating to implementation of NPP MO 3&4.

Within the trans-boundary assessment the following affected parties have sent their opinions:

1. ***Republic of Poland as the affected party*** in its position states, being underpinned by an analysis developed by the State Agency for Atomism in the Republic of Poland that (besides one comment relating to severe industrial accident) did not include any further material comments on elaboration of the assessment report due to the fact that the experience with operation of pressurized water reactors and the results of probabilistic safety assessment allow assessing the occurrence of trans-boundary radiological consequences when operating Units 3& 4, as being less likely.

Nevertheless, the Republic of Poland continues to have interest in the procedure of trans-boundary assessment, which goes before the operating license for NPP MO 3&4, which should confirm, whether these Units achieve expected design parameters, in particular those having impact on release of radiology emissions to the environment, both under normal and emergency conditions.
2. ***Republic of Hungary as the affected party*** stated that the process of decision-making on the Hungarian side included those Hungarian bodies, which will be probably affected by the project, as well as the public. For the evaluation of the assumed significantly adverse influences Hungary requires incorporation of those issues into the report, which are stated in the specific requests for the scope of assessment.

The position states that the assessment report shall contain both the technical description and taking care of the environment, as well as the issues of safe operation in the maximally satisfactory manner. Therefore it is very important that the assessment report covered in detail the required preventive measures for the case of design-bases a beyond design-bases accidents.
3. ***Austria as the affected party*** stated that the trans-boundary procedure of decision-making in Austria involved all Austrian federal lands and the Austrian public. Austria

submitted summary position on the intended activity in a hard copy form, in which it was dealing with the completeness aspect according to the Espoo Convention, the European Directive on the EIA (85/337/EEC in its valid wording) and the Slovak law on assessing impacts on the environment (Act No. 24/2006 Coll. I. on environmental impact assessment). Austria paid special attention to the issue of assumed influences crossing the state borders, the aspect of reactor safety including potential accident sequences with potential consequences, but also economic aspects relating to the energy sector and the electric energy. In the comments and recommendations it formulated requests for the quantity and the quality of information, which should be included in the report on environmental impact assessment.

4. **Czech Republic as the affected party** stated that by realization of the proposed activity it is not expecting any serious trans-boundary effects on the territory of the Czech Republic. None of the bodies of state administration or the public had any comments or recommendations for the intended activity. Nevertheless it requested that as an affected party it continues to be informed about all steps in the procedure of assessing impacts of the proposed activity on the environment, and to have the report on environmental impact assessment and on impacts on the health of people sent to them.
5. **Ukraine as the affected party** did not respond to the notification on implementation of NPP MO 3&4 according to the Espoo Convention.

After studying the submitted Intent and taking in regard the nature of the Intent and the delivered positions, MŽP SR in cooperation with the competent authority, the permitting authority and the affected authority, and after discussions with the submitting party, it determined the following scope of assessment of the proposed activity according to § 30 par. 2 and par. 3 of Act No. 24/2006 Coll. I.:

1. ALTERNATIVES FOR FURTHER ASSESSMENT

- 1.1 For further assessment of the impact of proposed activity – “**Nuclear Power Plant Mochovce VVER 4 x 440 MW – 3rd project**” besides the **zero alternative** (the status when the proposed activity does not be realized) it also requires **finalization of the proposed activity, which was included in the submitted Intent**.

2. SCOPE OF ASSESSMENT FOR THE PROPOSED ACTIVITY

2.1 General Conditions

- 2.1.1 With respect to the nature and the scope of the proposed activity and its proposed location it is necessary that the assessment report contained elaboration of all items as stated in Annex 11 to the Act No. 24/2006 Coll. I. adequately to the nature of proposed activity.
- 2.1.2 For assessment of the proposed activity no time schedule is set for elaboration of the assessment report, nor any specific requirements limiting the time scope of assessment.
- 2.1.3 The Proponent shall deliver to MŽP SR, dept. of environmental impact assessments, 29 complete assessment reports, 8 hardcopies of the final summary and minimum 5 text parts, if possible also the graphical part of the assessment report on electronic data carrier in Slovak language.
- 2.1.4 The Proponent shall deliver to MŽP SR, dept. of environmental impact assessments 4 complete hardcopies of assessment reports and 4 text parts, if possible also the graphical part of the assessment report on electronic data carrier in English language, for the sake of accelerating the communication between the party of origin – MŽP SR, and the affected parties, i.e. Ministry of Environment and Waters of the Republic of Hungary, Ministry of Environment of the Republic of Poland and – Federal Ministry of Agriculture, Forestry Management, Environment and Water Management of the Republic of Austria.

2.1.5 On the basis of conditions set by the Agreement between the Government of the Slovak Republic and the Government of Republic of Austria on implementation of the Convention on environmental impact assessment having trans-boundary impact (hereinafter only as the "Agreement") it would be necessary for the Slovak party as the party of origin to submit to the Austrian affected party sufficient summary of the assessment report, which would include the basic data on the proposed activity, i.e. title of activity, name and the seat of the Proponent, the purpose, nature, scope of activity, place of performing activities, brief description of the technical and technological solution, expected trans-boundary effects, graphical enclosure – in German. Further the assessment report must sufficiently respond to questions, comments and recommendations, which were required in the positions from federal lands and from the Austrian public, and that is in particular:

- ✓ Description of the potential severe damage of the environment on the basis of realized project, which includes primarily the population, fauna, flora, soil, water, air, climate, material goods, including architecturally valuable structures and landscape, as well as mutual operation of these factors;
- ✓ Description of potential serious influences on the environment by the proposed project, as well as impacts on the health and safety of persons as a result ● existence of project facilities; ● utilization of natural reserves; ● probability of accident occurrence; ● emissions of pollutants; ● causing inconvenience in the working as well as external environment; ● spent nuclear fuel management and management of various types of nuclear waste.
- ✓ Description of measures with the aid of which it would be possible to prevent, reduce or even to balance the serious negative consequences of the project on the environment;

The above stated summary of the assessment report shall be delivered by the Proponent to the MŽP SR **in two copies in hard copy and two copies on electronic data carrier in German and in Slovak languages.**

2.1.6 The Proponent, for the sake of accelerating the communication within the trans-boundary assessment procedure of the proposed activity between the party of origin – MŽP SR and the affected parties - Ministry of Environment and waters of Republic of Hungary, Ministry of Environment of the Republic of Poland, shall deliver according to his own consideration to the MŽP SR, dept. of environmental impact assessments a short summary of the assessment report for the affected parties, Republic of Poland and Republic of Hungary, in their native languages, and that is two copies as hard copy and two copies on electronic data carrier in Polish and in Hungarian languages.

2.1.7 Further procedure of the trans-boundary assessment shall relate to article 5 par. 2 of the Espoo Convention, i.e. consultations, if the affected party shows interest in such consultations, MŽP SR upon agreement with the Proponent and the affected party shall set the date, venue and the content of such consultations. If the affected party is willing to take part also in a public hearing on the proposed activity MŽP SR shall inform the affected party sufficiently in advance about the venue and the time of such hearing.

2.2. Specific Requirements

The comments received from the parties to the assessment procedure resulted in the need to elaborate in more details in the assessment report the following issues relating to the proposed activity:

2.2.1. In part **II. Basic data on the proposed activity, item 4.** Location - to complement (to describe the location of the complex of the nuclear installation of NPP Mochovce – dual unit of NPP MO 3&4 – region, district, cadastral area of the municipality, land plot, parcel numbers, title deeds).

- 2.2.2. In part II. **Basic data on the proposed activity, item 14. Permitting authority** to complement also the type of required permit for the proposed activity according to special regulations.
- 2.2.3. To complement the list of abbreviations into part A. INTRODUCTION or to B. STRUCTURE OF THE ASSESSMENT REPORT.
- 2.2.4. To complement and precise the chapter **Geology and seismology** – with regard to the fact that in the new manual of the IAEA - Evaluation of seismic hazards for nuclear installations, DS422, which is currently undergoing the commenting procedure by the member states of the IAEA, art. 2.12 (page 6) mentions the minimal recommended value for the maximal horizontal acceleration on the terrain surface (PGA) for the new projects JZ 0.15 g, which is higher than the original recommended value of 0.10 g, which remains to be valid for the existing nuclear installations.
In the event that the new recommended value of SL-2 applies for NPP Mochovce, 3rd project, then we are suggesting adjusting the wording on page 40 of the Intent, the last sentence in the meaning that the adopted value of PGA 0.15 g for NPP Mochovce 3rd project results also from international recommendations and it is not only a result of a conservative approach to setting the seismic level SL-2 for NPP Mochovce, 3rd project.
- 2.2.5. To complement chapter **Surface water**...with the description of sediments – what kind of sediments, which form approx. 50% of the captured volume in the water reservoir Veľké Kozmálovce, due to documenting the yield of the service water source.
- 2.2.6. To precise chapter on Energy sources (p. 70 of the Intent). Numerical data on generated/consumed electricity to be reviewed or confirmed (482.976 MWh is not 1.07% from the total generated energy per year).
- 2.2.7. To make adjustments in the chapter – **Emergency plans**:
- Para 1*
- Legislation governing emergency planning for the case of incident or accident of a nuclear installation does not include a notion of external and internal emergency plans – to be modified;
 - To complement the scattering model for forecasting radiation in the atmosphere;
- Para 2, first indent*
- Committee of the Government of SR - not existing – to be corrected, *Para 2, first indent*
- Para 2, second indent*
- There are no regional emergency committees – to be corrected;
 - i.e. there are no regional administrative bodies, regional authorities – to be corrected;
 - Plans for protecting the public (these are external emergency plans or some other plans) are not approved by the head of regional authority and are not agreed by UJD – to be corrected;
- Para 3*
- Official abbreviation of the organization of emergency response is not ERO – to be corrected;
- Para 4*
- The main roles of the organization of emergency response are not in compliance with the legislation – to be corrected;
- 2.2.8. To evaluate the impacts of the future operation of NPP EMO 3&4 on the surrounding environment in a complex manner focusing primarily on the assessment of increase of the risk for the inhabitants living in the vicinity resulting from commissioning of MO3&4, in the risk, which the population is facing due to the existence of nuclear installations, which are already in operation in the given location - NPP EMO 1&2 (including the operation of the final processing of liquid radwaste (FS KRAO) and the National Repository of Radwaste (RU RAO). So to prove that the expected impact relating to the proposed activity is negligible and with this rationale to defend the request

of the Proponent to abandon the alternative solution for the "Nuclear Power Plant Mochovce VVER4x440 MW 3rd project".

- 2.2.9. Chap. V. *Comparison of alternatives for the proposed activity and the proposal of an optimal alternative, part: Protection from ionizing radiation, physical protection and emergency planning*, p. 108 – the second paragraph mentions national regulatory authority – to give the name of this authority.
- 2.2.10. Chap. V. *Comparison of alternatives for proposed activity and the proposal of the optimal alternative, part Protection against ionizing radiation, physical protection and emergency planning*, p. 109 – the last indent, if there is an agreement on mutual cooperation, it should state a concrete number of such agreement, the title and the date from when it is effective (or will be effective).
- 2.2.11. Chap. V. *Comparison of alternatives of proposed activity and the proposal for optimal alternative, part Conclusion*, p. 111 – The text below this title is too brief and unclear. For example, it includes a very non specific reference to part IV of the Intent, which however has 41 pages. The conclusion should be formulated in a clear and unambiguous way, comprehensibly and if necessary, it should be supported by concrete references to the preceding text.
- 2.2.12. To state the list of authors of the assessment report (the responsible researcher, project manager, research team) by names and not to present the authors of the Intent only in a form of illegible signatures.**
- 2.2.13. To state the latest possible information about the current status of the environment. To complement up-to-date data on average monthly air temperatures, to evaluate the air stability. To complement the temperatures of the Hron stream before the discharge and after the discharge of cooling water from the power plant. To give an overview of radioactive burden of measured values from 24 monitoring stations - TDS, which monitor the environmental burden. To complement the results from the monitoring stations monitoring the seismology values of the affected area.)
- 2.2.14. To incorporate the balance review of the Hron river from the profile of the planned water works Slatinka until the estuary while taking into consideration the existing permitted offtakes of surface water and the expected demands for offtake of water relating to the planned activities in the area of interest with the aim to preserve the minimal ecological flows below the water works Kozmálovce while having required offtake after commissioning of NPP MO 3&4.
- 2.2.15. To review whether the operation of the nuclear power plant NPP MO 3&4 would have a negative impact on the flow and the quality of water in the Hron river below the VN Veľké Kozmálovce or not. If the assessment procedure demonstrates negative impact of operation of the proposed activity on the ecosystem of Hron as a result of low residual flow rates caused by the water offtake, the measures for elimination of such negative impacts must be defined as forced investments relating to implementation of NPP MO 3&4.
- 2.2.16. To complement information relating to historical records of more significant floods on the Hron river. The last year recorded as having floods was year 1981. To complement assessment of occurrence of floods currently, potentially for the past period.
- 2.2.17. To make an assessment how the situation would be resolved if the Slovak Water Management Company, state enterprise, the branch office Banská Bystrica, as the administrator of water structure Veľké Kozmálovce would be unable to secure supply of surface water necessary for after-cooling of reactors of EMO 1,2,3,4, due to decline in the usable reservoir storage VS Veľké Kozmálovce down to 50% and in case of longer-term deficit inflows below $Q_{364} = 9,233 \text{ m}^3 \cdot \text{s}^{-1}$. Because the administrator of VS must secure objective need in this section representing minimal flow in the profile VS Veľké Kozmálovce in the amount of cca $11 \text{ m}^3 \cdot \text{s}^{-1}$ corresponding to Q_{355} of the daily water (currently there is a temporary decision and due to construction of EMO there is a minimal

flow rate set at the profile of VS Veľké Kozmálovce at $6.6 \text{ m}^3 \cdot \text{s}^{-1}$) so it is necessary to review this situation and to suggest relevant measures due to increased offtake of cooling water expected for NPP MO 3&4, in order to prevent increase in the balance tension in relation to the minimal residual flows, which would be environmentally not sustainable. During the period of minimal flows on the Hron river this may cause inability to cover the water needs for other users and their regulation and also to tension with respect to the quality of surface water in the problematic indicators, such as N-NO_3^- , N-NH_4^+ , or the water temperature. To propose other alternative for cool down of reactors of EMO 1,2,3,4 for example system of air cooling.

- 2.2.18. To complement the part *Basic data on the proposed activity* - data on sources of pollution. It should include data on the expected activity of discharges into the atmosphere and to surface water during normal operation, including operational conditions on the level of operational limits (in particular limits for leakages in the tightness of fuel cover, leakages in the primary and the secondary circuits).
- 2.2.19. To respect that the annual balance limit for waste water discharged to surface waters for the tritium activity has already been drawn by the operation of NPP MO units 1&2 on the level of 60-80 % and for operation of four units it would be necessary to adjust the limit. The tritium in waste water represents a dominant path for exposure of a critical group of the population living in the vicinity.
- 2.2.20. To complement also more details on the systems of cleaning of gaseous and liquid waste before they are discharged, more details on the monitoring systems monitoring their activity and on the possibilities of controlling discharges and coordination of discharges with the first dual unit of MO.
- 2.2.21. In *part C, chapter III, item 1. – Impact on the population* – to complement results of model evaluation of impacts of discharges to the dosage load on the population in the vicinity. The models should evaluate not only discharges on the level of current values of discharges (according to Units 1 and 2 of NPP MO 1&2), but also discharges on the level of expected limits for units 3 and 4 - NPP MO 3&4, potentially location limits.
- 2.2.22. In the analyses to state also partial contributions of individual paths of radiation and to take in regard also the radionuclide, for which there are no limits set, for example C -14 in air pollutants.
- 2.2.23. Within assessment of impacts with trans-boundary effect to assess at least the burden on the critical group of the population abroad. Although it is expected that the radiation exposure would be very low, it is still necessary to prove it with a model calculation, the statement that the impact of the proposed activity abroad would be negligible is perceived as insufficient in this case. In connection with this it can be expected that according to article 37 of the EURATOM Treaty the European Commission would require relatively detailed information on trans-boundary influences of the proposed activity.
- 2.2.24. In *part C, chapter III, items 4 to 6* – to assess and elaborate in more details influences on water ratios, soil and air, so that the proposed activity could be sufficiently reviewed.
- 2.2.25. In *part C, chapter III, item 19* – to complement operational risks with the analysis of operational risks and a model evaluation of the influence of selected extraordinary events – accidents – on the environment and radiation exposure of the population. To state the measures for prevention and for potential consequences in case of an accident including leakage of radioactivity.
- 2.2.26. In *part C, chapter IV. – Measures* - to analyze in more details in particular technical, technological and operational measures for prevention, elimination, minimization and compensation of impacts on the environment, compared to the existing units of NPP MO 1&2 also in connection with the original design of NPP MO 3&4. To also state all modifications on structural and technology parts compared to the originally approved design (for example, measures to strengthen the main supporting civil structures and

technology should respect latest available information on seismic characteristics NPP Unit 3. and 4. removal of structural parts containing asbestos, etc.) and to assess the condition of the existing engineering structures and technology equipment from the time of their conservation until the present time.

- 2.2.27. To complement the list of individual types of waste, which are created during the construction of NPP MO 3&4 itself together with the estimation of their quantity and the method of handling, including waste, which is suitable for repeated discharge into the environment – to waste dumps, etc. (In compliance with the Decision of the Nuclear Regulatory Authority of SR No. 246/2008, which states the building, demolition and reconstruction works, during which replacement of several equipment and materials is going to take place according to the relevant consent from the District Environmental Office Levice).
- 2.2.28. To state the quantitative and qualitative data on inputs and outputs of realized activity and to propose monitoring of pollutants together with measures for elimination of their negative impact.
- 2.2.29. To assess impacts on the environment and the health of people and to suggest measures for their elimination not only during the phase of construction and operation, but also in the phase of decommissioning and liquidation of these units, also these influences to be reviewed in a complex manner from the view of their significance and the time development of the review. (Austria, as the affected party, requests in its position to review and to establish the ratio of diseases, such as thyroid diseases and leukemia, which could be provably caused by radioactivity while securing possibility to establish consequences of operation on the health of population in the affected area).
- 2.2.30. To state what method would be used to address safety issues in replacing the spent fuel, to state the method of its transportation to the interim storage, to the repository, as well as the method of its disposal from the material and timing point of view. To complement data on storage of spent nuclear fuel. (To finalize the part on radioactive waste management originating from NPP MO 3&4. To complement data on handling high radioactive nuclear fuel, the data on the quality and the capacity of the interim storage of spent nuclear fuel; to specify solutions necessary for securing storage of this high radioactive hazardous material.)
- 2.2.31. To describe the method of sludge disposal, this is produced when disposing with the waste water as part of the activity; to state the method of sludge storage, as well as data on its quantity and quality.
- 2.2.32. To assess influences of the activity on the health of people according to selected demographical and health indicators of the population living in the vicinity of the Nuclear Source Mochovce, including social and economic consequences and the context, disturbing relax and quality of life and acceptability of the activity for the affected inhabitants while using results from the current evaluation of the health condition of the population living in the vicinity of NPP Mochovce prior commissioning and during operation of Units 1& 2 and expected development after commissioning of Units 3&4.
- 2.2.33. In connection with assessment of the impact of activity on the environment and the health of people to propose measures for their elimination not only during the phase of construction and operation, but also during the phase of decommissioning and liquidation of these units, and these influences to be reviewed in a complex manner from the view of their significance and the time development of the assessment.

Requests of the Republic of Poland as the affected party in the trans-boundary assessment:

- 2.2.34. To take in regard aspects of nuclear safety for the proposed activity, this is related to provision of detailed data relating to the method and procedure for intervention and information in case of severe accident (Accident Response).

Requests of the Republic of Hungary as the affected party in the trans-boundary assessment:

- 2.2.35. To complement data documenting how Units 3&4 of nuclear power plant Mochovce would meet maximal standard of nuclear safety valid at present.
- 2.2.36. To complement information about how the requirements for design-basis beyond design-basis accidents have been addressed. To set the limits for leakage from hermetic areas (design tightness) as well as what other safety measures are available (for example the system of localization of the accident, the spraying system, system of burning hydrogen) and what preventive effects these measures may have in case of leakage from the primary circuit.
- 2.2.37. To prove how the power plant is prepared for an earthquake, this may occur in the area with respect to the seismic sensitivity of the area.
- 2.2.38. To complement information about discharges, as well as about their characteristics and distribution possibilities and on the basis of meteorological information from the location to define the territory of influence of the proposed activity.
- 2.2.39. To state how the spent fuel would be handled and what would be the influence of spent fuel on the environment during the entire life cycle of the fuel.
- 2.2.40. To prove safety of operation of the nuclear power plant also by how the spent fuel is being handled and what would be the influence of the spent fuel on the environment during the entire life cycle of the fuel.
- 2.2.41. To describe in details a well functioning monitoring network. To consider possibility of access by official Hungarian authorities responsible for prevention of damages to the on-line system of measuring radioactivity in the vicinity of the nuclear power plant Mochovce in Slovakia.

Requirements of Austria as the affected party in the trans-boundary assessment:

- 2.2.42. To describe in significantly greater detail the equipment and the conditions of its operation.
- 2.2.43. To complement information on nuclear fuel and on conditions of its use (the type, enrichment, the quantity, number and condition of fuel elements), as well as conditions for operation and the period of employment in the reactor (fuel burn-up time).
- 2.2.44. To describe radwaste management and discharges and their impact on the environment.
- 2.2.45. To confirm or to defeat the consideration in the Intent to increase the output by nearly 22%. (While the thermal output of the reactor (primary circuit) is stated the same as in the original design on the level of 1,375 MW, the electric output is reported as 535 MW gross.)**
- 2.2.46. To specify the detailed technical descriptions of planned changes in the primary and secondary circuits.
To describe in details significant changes compared to the originally approved design with the emphasis on the safety aspect, as stated by Golder (2008, page 100 of the Intent). To analyze improvements in the realized activity, this should be documented with appropriate results from the safety analysis.
To pay special attention to the following topics in particular, as these have extraordinary importance from the safety aspect, not only in connection with potential trans-boundary impacts (BT 2008):
- ✓ Severe accidents (to state the measures for preventing and mitigation of consequences);
 - ✓ Improved tightness of Hermetic zones and realization of systems for locating design accidents – bubbler tower system (Confinement and the bubbler tower system);
 - ✓ Potential seismic threat on the location;
 - ✓ Integrity of the reactor pressure vessel;
 - ✓ Reliability according to the control system (I&C criteria).

- 2.2.47. To explain, why the maximal horizontal acceleration was increased to 0.15 g in connection with the fact that the activity is realized in a seismic area.
- 2.2.48. To assess resistance of nuclear installation against external events, such as malice aircraft collision.
- 2.2.49. To assess solution of the realized activity in the area of fire protection compared to the original design and to describe how the deficits conditioned by the original design of the proposed activity have been resolved (recommendations of the IAEA 1999).
- 2.2.50. To describe the permitting procedure and expected periods in the next step according to Act No. 24/2006 Coll. I. on environmental impact assessment and the Act No. 541/2004 Coll. I. on peaceful use of nuclear energy (Atomic Act).
- 2.2.51. To describe the status of insurance for the case of accident (financial coverage for nuclear damage in Slovakia)
- ✓ DBA - design-base accidents
 - ✓ BDBA - beyond design-base accidents
- 2.2.52. To add other relevant comments and recommendations from the position of Austria.
- 2.2.53. To perform thorough analysis of all other comments resulting from the positions of the parties to the assessment procedure by the party of origin, and also the affected parties submitted on the Intent according to the national law, the Espoo Convention and the Bilateral Agreement between Austria and the Slovak Republic. Justified comments from the positions to be incorporated in the assessment report.

3. NOTICE

Pursuant to § 30 par. 4 of Act No. 24/2006 Coll. the Proponent, in cooperation with the affected municipality, is obliged to inform the public without undue delay about the determined scope of assessment using suitable manner.

Copies of positions on the Intent delivered to the Ministry according to § 23 par. 4, Act No. 24/2006 Coll. I. were handed over to the Proponent during the determination of scope of assessment.

Mgr. Daniela Žišková
Commissioned with managing the dept. of environmental
Impact assessments

Encl.: Minutes from the scope of assessment

Delivered to:

1. **Slovenské elektrárne, a. s, Bratislava – Atómové elektrárne Mochovce, závod, Hraničná 12, 827 36 Bratislava 212,**
2. **Municipal Office Kalna nad Hronom, Červenej armády 55, 935 32 Kalná nad Hronom**

Cc: for information

3. **Ministry of Economy of SR, Energy Section, Mierová č. 19, 827 15 Bratislava 212**
4. **NUCLEAR REGULATORY AUTHORITY OF THE SLOVAK REPUBLIC, Bajkalská č. 27, P. O. BOX č. 24, 820 07 BRATISLAVA 27;**
5. **National Labour Inspectorate of SR, dept. of labour inspection in the nuclear energy sector, Špitálska č. 8, 815 07 Bratislava 1;**

6. Public Health Office of the Slovak Republic, Trnavská cesta 52, P.O.BOX 45 , 826 45 Bratislava;
7. Regional Office of public health Levice, Komenského č. 4, 934 38 Levice
8. District Environmental Office Levice, L. Štúra č. 53, 934 26 Levice;
9. Office of the Nitra self-governing region, Štefániková č. 69, 941 01 NITRA
10. District office for road transportation and roads Levice, L. Štúra 53, 934 26 Levice
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17. Labour Inspectorate Nitra, Jelenecká cesta 49, 949 01 Nitra,
18. Technical Inspection a.s., Headquarter Trnavská cesta 56, 821 01 Bratislava 2,
19. Railway Regulation Office , Miletičová 19, 821 08 Bratislava 2,
20. Ministry of Environment of the SR, Department of environmental management hazards, Nám. L. Štúra č. 1, 812 35 Bratislava,
21. Ministry of Environment of the SR, Division of water and energy sources, Nám. L. Štúra č. 1, 812 35 Bratislava,
22. Ministry of Environment of the SR, Division of Geology and Natural Resources, Nám. L. Štúra č. 1, 812 35 Bratislava,
23. Municipal Office Novy Tekov, 935 33 Nový Tekov
24. Municipal Office Stary Tekov, Tekovská 1, 935 26 Starý Tekov
25. Municipal Office Veľky Ďur, Hlavná 80, 935 34 Veľký Ďur
26. Municipal Office Tlmače, Nám. odbojárrov 10, 935 21 Tlmače
27. Municipal Office Male Kozmálovce, 935 21 Tlmače ,
28. Slovak Environment Agency, CMŽP, Ing. Vladimír Lazorišák, Ďarková 19, 949 01 Nitra,