

COMMISSION
FOR THE TEMELIN NUCLEAR POWER PLANT
ENVIRONMENTAL IMPACTS ASSESSMENT

STANDPOINT

OF THE COMMISSION
FOR THE TEMELIN NUCLEAR POWER PLANT
ENVIRONMENTAL IMPACTS ASSESSMENT

Commission members:

RNDr. Jiří Hanzlíček

RNDr. Miroslav Martiš, CSc.

Prof. Ing. Josef Říha DrSc.

RNDr. Milan Macháček

Prague on July 15, 2001

I.

The Melk Agreement is the only case within the European Union when the finished construction is assessed. It is an evidence of voluntary and helpful approach of the Czech party to discussions. At the meeting held in Melk it was agreed that the analyses and documents, which have already been performed and elaborated, would be mainly used. The environmental impacts assessment was governed by the European Union Guidelines on Environmental Assessment of Public and Private Projects No. 85/337/EEC and No. 97/11/EC and especially with respect to participation of the neighboring countries using the performed analyses, elaborated reference documents and other documents.

On the basis of the said protocol, the Czech Republic Government appointed a four-member Commission for the Temelin Nuclear Power Plant Environmental Impacts Assessment (hereinafter referred only to as the Commission) by the Resolution No. 65 of January 17, 2001, and specified its tasks, assessment areas and work schedule. Interested countries, that is to say Austria and the Federative Republic of Germany, appointed its representatives with observers status into the Commission and the European Union appointed two expert consultants of the European Commission. Their target was not only to observe, but also to adjudicate in certain sense with an objective to assist during delicate issues. The Commission with foreign participation held three workshops as follows: in Prague on February 13, in Půhonice on March 1 and in Prague on April 4 - 5, 2001. The main target of the Commission was to discuss the Assessment methods and its scoping list, to prepare the public hearing in the Czech Republic and to participate at the public hearings in the interested countries.

From the very beginning the Austrian party wanted to include impacts of the so-called serious (beyond-design) accidents into the Environmental Impacts Assessment even if this issue does not form part of the Environmental Impacts Assessment (EIA). It neither forms part of the Environmental Impacts Assessment according to the international standards nor it is included in the European Union Guidelines. A compromise solution was finally achieved with the conclusion that this field will not form part of the Environmental Impacts Assessment, but it will be subject to the separate professional meeting (forum) where this issue will be discussed from the point of view of methodology, resulting assessments and derived measures. This forum was organized by the State Office for Nuclear Safety in a form of a one-day seminar on April 4, 2001. On the basis of an offer of the Czech party, the summarized document of this Seminar (25 pages) was published at the Internet pages of the Ministry of Foreign Affairs, separately from the Environmental Impacts Assessment performed by the Commission.

The Temelin Nuclear Power Plant Environmental Impacts Assessment according to the part V. of the Melk Protocol (hereinafter referred only to as the Assessment) performed by the Commission was submitted to the Austrian and German parties as well as to the European Commission representatives on April 10, 2001 in accordance with the agreed work schedule and with the Melk Protocol requirements. This Assessment was elaborated exactly on the basis of the scoping list approved by all foreign participants at the meeting held on April 5, 2001 (refer to the third Commission meeting records). On April 20, 2001, the Assessment was submitted to the participants in English in compliance with the third Commission meeting minutes. In the minutes of the said third workshop, the Czech party emphasized that translation into English would be delayed a bit because of the extensive character of the Assessment. At the same meeting the Austrian party informed that it would ensure German translation itself.

The Assessment as well as all information on the Commission activities was published at the Internet pages of the Ministry of Foreign Affairs (www.mzv.cz/EIA).

II.

The basis for elaboration of the Assessment was the scoping list (220 items) consulted with, and accepted by the experts of Austria, Federative Republic of Germany and European Commission. The Czech Republic Government Commission elaborated the Assessment in co-operation with more than 150 experts of wide number of scientific and research institutes, universities and other specialized organizations. The Assessment concept was subsequently subject to supervision by ten important persons in the field of Czech science and technique who covered the professional conclusion of the Assessment by their professional scopes of interests.

The Assessment, within the scope given by the scoping list, was elaborated on the basis of critical evaluation of all available documents as well as tens of other specially required documents, which were elaborated only for these purposes.

The Assessment implicitly compared the Temelin Nuclear Power Plant construction and operation status with the status of non-realization of this power plant in all relevant aspects. It means that the following fields were, for instance, compared in a satisfactory way: changes in landscape geomorphology, impacts on landscape character, impacts on underground water regime, emission of radioactive substances into the environment, and so on, with real conditions before environmental intervention. In an analogous way, the impacts on atmosphere, mesoclimate, Vltava water temperature, tritium concentration in recipient, radiation hygiene issues, and so on, were compared with the situation before fission reaction start-up. Non-considering of these comparisons would unable assessment of real environmental impacts of the nuclear power plant under the condition, in which it is at present time.

On the basis of its examinations, the Governmental Commission came to the conclusion that the impacts of the Temelin Nuclear Power Plant on the individual elements of the environment (atmosphere, climate, hydrosphere, soil, minerals, plant kingdom, animal kingdom (fauna), ecosystems, material property and cultural heritage) can be expected as of low importance and acceptable.

Outlets of radioactive substances into the atmosphere, water system and water reservoirs, and food chain will not cause, during the normal nuclear power plant operation, any environmental contamination by the radiation, which could lead to endangering of the population's health.

The factors of non-radiation nature will not cause any additional risks for the population during the normal nuclear power plant operation.

A sensitive theme seems to be psycho-social issues, which are mainly connected with the cosiness rate of the inhabitants living permanently in the nuclear power plant surroundings.

An uncertain issue is imperfect knowledge of biological systems (animal and plant kingdoms, ecosystems, humans) reactions to long-term affection of even very low radionuclide doses (deep under limits), mainly in synergic co-operation with other factors (including psychical factors of humans).

Negative effects on the environment were mainly caused during the period of the nuclear power plant construction by means of irreversible liquidation both of material and immaterial

culture values in the surroundings, by means of drastic interventions into the hydrological and landscape - ecological ratios of spring areas in the nuclear power plant surroundings and by means of the so-called re-cultivations in other parts of South bohemia, which should allegedly compensate ecological damage caused by the nuclear power plant construction. However, the natural river basins (for example Stropnice) were in fact devastated and the landscape character was irreversibly changed by means of new decisive objects in connection with modification of original scale and historical structure of landscape.

Assessment of selected reference events occurred in the Temelin Nuclear Power Plant showed that endangering of health of the population in the Czech Republic or in its neighboring countries - Austria and the Federative Republic of Germany - is not probable even in case of use of conservative presumptions. Emergency planning specifies the measures potentially applicable within 13 km around the nuclear power plant. Even the so-called beyond-design accidents (with probability higher than 10^{-7}) were also assessed in addition to the standard scope although they are not directly subject to the ecological assessment and the measures applicable in such hypothetical situations were formulated. Nuclear safety issues were independently assessed by relevant specialists in a parallel way with the nuclear power plant environmental impacts assessment; these common issues were mutually consulted by both teams where they related to each other.

Radioactive waste disposal was assessed both from the point of view of minimization of its creation and from the point of view of possible risks for the environment and both of these items were found out acceptable. Spent fuel disposal is at the given stage sufficiently assured from the technological point of view in order to be possible to decide on likely further use or definite storage of these materials within appropriate time horizon, which is 65 years in the Czech Republic.

As it results from the attached table, based on two independent methodological procedures, the total Temelin Nuclear Power Plant operation environmental impacts can be assessed as low, insignificant and acceptable.

KEY PROBLEMS OF THE ASSESSED AREAS AND THEIR INTER-RELATED ASSESSMENT

Assessed area	Key problem	Key problem classification - see the Reference Table	Relative importance within assessed areas	Final assessment of area as weighted average of classification
Air and climate	(A) air – introduction of radioactive substances in the environment by discharge (B) climate – potential impact of cooling tower operation on territorial climatic factors	2 2		2.000
Hydrology	(A) supply and quality of drinking water (B) supply and quality of industrial water (C) risk of radioactive contamination of a recipient owing to escaping tritium-contaminated water	3 1 3		1.700
Soil and rock environment	(A) impact on soil and rock environment (B) seismic security	2 3		2.800
Impacts on the population	(A) radiation hygiene – air (B) radiation hygiene – water (C) radiation hygiene – food chain (D) communal hygiene (E) welfare factor	2 3 1 1 4		2.950
Nature and landscape (fauna, flora, ecosystems)	(A) impact on landscape feature (B) impact on fauna, flora, ecosystems (C) impact on forests (D) impact on agricultural crops (E) impact on cultural assets (F) impact on tangible assets	5 2 1 1 3 2		3.750
Waste (including radioactive and chemical waste)	(A) radioactive waste – liquid (bitumenation) (B) radioactive waste – solid (C) spent fuel (D) other non-radioactive waste	2 2 3 2		2.500
Possibilities accident	(A) prevention of accident (B) radiological impact of accidents (C) emergency planning and preparedness	2 3 2		2,250
Weighted average				2,506

In addition, the following table documents the differences between the operated nuclear power plant impacts and the status when the nuclear power plant is not in operation and is preserved - the impacts, which will remain the same in case of non-putting into operation and its preservation, are of high or very high importance when compared with the normal operation (for instance seismic safety, cosiness factor, effects on landscape character and prevention against accident occurrence), while the impacts, which are more favourable in case of non-putting into operation and its preservation, are of low or very low importance (for instance radiation hygiene and impacts on ecosystems).

Comparison of the environmental impacts in case of non-putting of the Temelin Nuclear Power Plant into operation and its preservation and in case of its putting into operation.

Assessment areas		IMPACTS ASSESSMENT OF NON-PUTTING INTO OPERATION AND PRESERVATION - REMAINS THE SAME	IMPACTS ASSESSMENT OF NON-PUTTING INTO OPERATION AND PRESERVATION - IS MORE FAVOURABLE
O ₁	ATMOSPHERE AND CLIMATE		(A) Atmosphere - release of radioactive substances into the environment in a form of outlets (B) Climate - potential impacts of cooling towers operation on climatic factors of the surroundings
O ₂	HYDROLOGY	(A) Assurance and quality of drinking water	(B) Assurance and quality of technological water (C) Risk of radioactive pollution of recipients as a consequence of tritium water
O ₃	SOIL AND MINERALS	(A) Impacts on soil and minerals (B) Seismic safety	
O ₄	IMPACTS ON THE POPULATION	(D) Civic hygiene (E) Cosiness factor	(A) Radiation hygiene (B) Radiation hygiene - water (C) Radiation hygiene - food chain
O ₅	NATURE AND LANDSCAPE (ANIMALS AND PLANT KINGDOM, ECOSYSTEMS)	(A) Impacts on landscape character (E) Impacts on culture values (F) Impacts on material property	(B) Impacts on animals and plant kingdom, and on ecosystems (C) Impacts on forests and wood (D) Impacts on agricultural cultures
O ₆	WASTES (INCLUDING RADIOACTIVE AND CHEMICALS)	(C) Spent fuel (D) Other non-radioactive wastes	(A) Liquid radioactive wastes (bituminisation) (B) Solid radioactive wastes
O ₇	POSSIBILITY OF ACCIDENT OCCURRENCE	(A) Prevention against accident occurrence (C) Emergency planning and preparedness	(B) Radiological impacts of accidents on the environment

The condition of the Commission for totally positive assessment of the Temelin Nuclear Power Plant environmental impacts is realisation of the below-stated summary of concrete measures as well as elaboration of cyclic post-project analysis, within the frame of which the correctness of the assessment and efficiency of the proposed measures will be regularly revised with the target to achieve relevant changes in the nuclear power plant operation control, further monitoring of its environmental impacts and eventually adequate mitigation of the environmental impacts.

Concrete measures conditioning the Temelin Nuclear Power Plant operation from the point of view of the Environmental Impacts Assessment conclusions:

With the target to minimise stress feelings mainly of the Austrian public, the Commission recommends (besides standard monitoring of the Temelin Nuclear Power Plant Radiation Inspection Laboratory, standard monitoring within the national grid of the Czech Hydrometeorological Institute, respectively others) to ensure independent super-standard monitoring of the nuclear power plant operation wastes.

The optimal solution for super-standard measures is implementation of research task financed from the funds for science and research within the framework of the Czech Republic Governmental Council.

1. To establish a system for continuous informing of wide public both on current values of the factors affecting the environment as a consequence of the Temelin Nuclear Power Plant operation (on-line outlets) and on development of time sequence of selected parameters of the environmental impacts monitoring (continuously updated diagrams, photos of the Earth remote examination, bio-monitoring results, and so on) as well as on other important facts (for instance earthquake in Alps indicated on seismological stations in South Bohemia, ...). All of these data would be shown on the Internet pages of the Temelin Nuclear Power Plant, on publicly available monitors in Týn nad Vltavou and in České Budějovice, and in the Temelin Nuclear Power Plant information centre.
2. To ensure continuous measurement of gaseous radioactive outlets within the framework of the existing Radiation Monitoring Network of the Czech Republic and of the operator.
3. To continuously improve and modernise the existing radiation monitoring network operated by the state authorities of the Czech Republic.
4. To regularly inform the public in the Czech Republic, Austria and the Federative Republic of Germany on all measurements.
5. To permanently monitor the impacts of the Temelin Nuclear Power Plant cooling towers on climate even in wider region (through the existing meteorological stations network of the Czech Hydrometeorological Institute).
6. To ensure independent and continuous monitoring of the Temelin Nuclear Power Plant operation impacts in the following fields:
 - Assurance of supply and quality of drinking water from the point of view of the nuclear power plant as well as nuclear power plant impacts on the water resources in the Temelin Nuclear Power Plant surroundings;
 - Assurance of supply and quality of technological water from the point of view of the nuclear power plant;
 - Impacts of emissions on water system and risk of radioactive pollution of the recipient as a consequence of tritium water and other water effluents, including assessment of temperature impacts, accumulation and synergic impacts of harmful substances (including eutrofisation) in Orlik water reservoir;
 - Impacts of emissions on atmosphere, verification of thermal pollution and evaporation of water on cooling towers;
 - Impacts on agricultural activities and forest economy.

7. To order elaboration of soil map of the nuclear power plant surroundings in a digital form for surface generalisation of the impacts on pedosphere (soil sphere) from the point of view of further dynamic development.
8. To ensure conditions for seismic monitoring (including establishment of the monitoring centre located within the Temelin Nuclear Power Plant area, eventually in the Information Centre). The basic objective of this centre will be to inform the public, state organisational units and local municipal governments on earthquake impacts on the locality and on the surroundings of the Temelin Nuclear Power Plant.
9. To guarantee continuous maintenance and restoration of all technical equipment and devices of the nuclear power plant in such a way to correspond with the up-to-date status of the technique development as well as with the knowledge in the field of seismic engineering.
10. To ensure determination of radioactive substances in surface water, underground water and drinking water resources as well as in the food basket elements within the programme of the Radiation Monitoring Network of the Czech Republic.
11. To create conditions for implementation of the health condition monitoring study of about 30,000 of inhabitants in the surroundings of the Temelin Nuclear Power Plant by means of epidemiological and radiobiological methods (for instance using chromosome analysis).
12. To establish a concept of continuous sociological examination of the population within wider surroundings of the Temelin Nuclear Power Plant, to create conditions for implementation of the proposed programmes and related measures in the field of informatics and cultural - educational activities.
13. To discuss revitalisation of the area around the Temelin Nuclear Power Plant as a compensation for impacts on the Temelin Nuclear Power Plant area surroundings during its construction, to discuss reverse revitalisation in damaged sectors of river basin including initiation of discussion on revitalisation system in the effected area of Stropnice river basin.
14. To ensure maintenance (mitigation of undesirable succession) on sub-xerophyte locations of the former military area of Litoradlice and on areas of valuable marshes around new retention reservoir in Strouha river basin.
15. To ensure monitoring of radionuclide accumulation in biological materials - bryophyte, forest soil and pine bark and to maintain monitoring of radionuclides in fish.
16. To monitor impacts of waste and rain waters by means of separate chemical and biological monitoring
 - In Býšov in Strouha river basin;
 - Monitoring of oxygen and temperature of selected sectors of Vltava;

- Season occurrence of plankton in Hněvkovice, Kořensko and Orlik reservoirs, and in selected model pond reservoirs in the surroundings of the Temelin Nuclear Power Plant, while maintaining, eventually extending monitoring of changes in chlorophyll concentration in Orlik water reservoir with emphasise on plankton share assessment with one sampling point under Kořensko;
 - To extend monitoring of changes in water ecosystems by monitoring of changes in zooplankton composition because of its sensitiveness on changes in water temperature and subsequent changes in water ecosystem trophic structure.
17. To establish long-term monitoring (even retrospective) of changes in landscape character by means of multispectral satellite data analysis, especially suitable for monitoring of humidity and temperature changes of landscape related to changes in vegetation structure and functions. We recommend annual assessment of satellite data and related creation of ground key for satellite data including definition of key biotopes comprising forests on satellite photos and to ensure regular generalisation in this context in five-year intervals. With respect to the range of individual photos it is possible to ensure objective assessment of changes, which could exceed the borders with Austria and the Federative Republic of Germany.
 18. To create conditions for financial security of care for residuals of preserved intangible cultural values in the surroundings of the Temelin Nuclear Power Plant (including prospects for about 65 cultural monuments) from the side of the Temelin Nuclear Power Plant operator as a compensation for affection of the landscape historical structure during construction.
 19. To decide on further use of spent fuel or to ensure definite storage in permanent underground storage within 65 years in accordance with the concept on spent fuel disposal approved by the Czech Republic Government.
 20. To eliminate high conservativeness of design accident calculations and to transfer to assessment of best estimate type; to compare inland calculation diagrams with the foreign ones.
 21. To improve eventual accident occurrence indication system including its assessment; to train emergency preparedness for this purpose and eventually to update emergency plans (conditions for fast information, ability to perform actions and coordination of emergency measures).

III.

As it results from the said attachments, only a small part of incentives relates to the own issues of the Temelin Nuclear Power Plant environmental impacts. As regards the public, four written incentives from the Czech Republic, only four critics and disapprovals from Austria and 322 letters from the Federative Republic of Germany (mostly in cyclostyle form) were delivered by June 26, 2001. As a summary we can say that foreign population did not react to the Commission Assessment, but only to the information stated in their own mass media. They probably had no possibility to read the Commission Assessment. Comments, questions and incentives were oriented to the nuclear safety sphere, which is included in the Section IV. of the Protocol, energetic policy sphere, which is under exclusive responsibility of the Czech Republic and economic connection sphere, which is under competence of ČEZ, a.s.

Even if the interests of most respondents were mainly oriented outside the scope of the agreed range and contents of the Temelin Nuclear Power Plant environmental impacts assessment, the Commission members in cooperation with the invited experts tried to settle all spectrum of incentives.

Section V of the attachment, where the questions concerning the Commission activities are answered, reacts to the materials of the Austrian Ministry of the Environment.

All 67 asked questions (refer to the attachment no. 4) were answered at the public hearing held in České Budějovice. Small part of questions, which were not answered at the hearing in Vienna (attachment no. 6), is included in a special part of the attachment no. 7.

Answers concerning the Commission activities included in the attachment to the letter of the Austrian Minister W. Molterer of July 11, 2001 are stated in the attachment no. 8.

For detailed explanation of some questions we recommend bilateral meeting of relevant professional specialists of the Czech Republic and Austria.

Final Commission recommendation

The Governmental Commission for the Temelin Nuclear Power Plant Environmental Impacts Assessment recommends all further questions, problems and incentives in the field of nuclear safety, radiation protection, economy, energy field, environmental protection and so on to be discussed with relevant professional specialists and experts of the Czech Republic and Austria within the framework of the discussed bilateral relations and agreements.

II. The Appendix

1. Sending of the Assessment of the Commission to affected bodies of the state administration

In accordance with the resolution of the government No. 65/2001, the assessment was sent, on April 19, 2001, to all the affected bodies of the state administration, regions, and local governments and towns within the zone of emergency planning:

**Chamber of Deputies
The Parliament of the Czech
Republic**
Prague

586 01 Jihlava

**The Czech Inspection of
Environment**

Regional inspectorship
České Budějovice
Ing. Ladislav Krátký
Žižkova 1 PS 32
370 21 České Budějovice

**The Senate
The Parliament of the Czech
Republic**
Prague

**Regional authority České
Budějovice**

Environmental department
Mánesova 3
371 03 České Budějovice

District Health Authority

MUDr. Jan Augustin
Schneiderova 32
370 71 České Budějovice

Ministry of Agriculture
Prague

**Regional authority
Strakonice**

Environmental department
Smetanova 533
386 01 Strakonice

**The State Office
of Nuclear Safety**

Ing. Dana Drábová
Senovážné nám. 9
101 00 Prague 1

Ministry of Environment
Prague

**Regional authority
Prachatice**

Environmental department
Horní 164
383 01 Prachatice

**Ministry of Environment –
Department II of the State
administration**

Ing. Václav Osovský
Jeronýmova 1
370 01 České Budějovice

Ministry of Health
Prague

**Ministry of Internal
Development**
Prague

**Regional authority Český
Krumlov**

Environmental department
Tovární 165
381 01 Český Krumlov

**The Embassy of the
Federal Republic of
Germany**

Vlašská 19/347
101 00 Prague 1

**Regional authority
of Middle-Bohemian
Region**

P.O. BOX 59
Zborovská 11
150 21 Prague 5

**Regional authority
Jindřichův Hradec**

Environmental department
Janderova II/147
377 01 Jindřichův Hradec

**The Austrian Embassy in
Prague**

Viktora Huga 10
151 15 Prague 5

**Regional authority
of České Budějovice
Region**

Žižkova 12
371 22 České Budějovice

Regional authority Tábor

Environmental department
Husovo náměstí 2938
390 01 Tábor

Municipalities:

**Regional authority
of Plzeň region**

P.O. BOX 313
Škroupova 18
306 13 Plzeň

Regional authority Písek

Environmental department
Budovcova 207
397 01 Písek

Dříteň

373 51 Dříteň

**Regional authority
of Jihlava Region**
Palackého 53

Temelín

373 01 Temelín 104

Týn nad Vltavou
Náměstí Míru 2
375 01 Týn nad Vltavou

Všemyslice
p. Neznašov
373 02 Neznašov 57

Olešník
373 50 Olešník

Hosty
p. Koloděje nad Lužnicí
373 03 Hosty

Chrást'any
373 04 Chrást'any u Týna
nad Vltavou

Žimutice
373 66 Žimutice 37

Bečice
373 66 Bečice

Dobšice
375 01 Týn nad Vltavou 1

Horní Kněžeklady
p. Žimutice
373 66 Horní Kněžeklady

Modrá Hůrka
p. Žimutice
373 66 Modrá Hůrka

Dolní Bukovsko
373 65 Dolní Bukovsko

Hluboká nad Vltavou
373 41 Hluboká nad
Vltavou

Vlkov
p. Ševětín
373 63 Ševětín

Mydlovary
373 49 Mydlovary

Zahájí
p. Mydlovary
373 49 Zahájí

Zliv
Náměstí Míru 10
373 44 Zliv

Dívčice
373 48 Dívčice

Nákří
p. Dívčice
373 48 Nákří

Bechyně
391 65 Bechyně

Hodonice
p. Březnice
391 71 Hodonice

Březnice
391 71 Březnice u Bechyně

391 71 Březnice u Bechyně

Čenkov u Bechyně
p. Březnice
391 71 Čenkov u Bechyně

Albrechtice nad Vltavou
Albrechtice nad Vltavou
398 16 Albrechtice nad
Vltavou

Protivín
Masarykovo nám. 12
398 11 Protivín

Žďár
Žďár
398 11 Protivín

Tálín
398 15 Tálín

Paseky
398 15 Paseky

Čičenice
387 71 Čičenice 79

Vodňany
Nám. Svobody 18/I
389 16 Vodňany

Záhoří
p. Březnice

Suggestions and comments were not risen.

2. Sending of the Assessment of the Commission to Non-governmental organizations

In accordance with the Aarhus Agreement, the report was also sent to non-governmental organizations on April 19, 2001:

International Civic Association
Česká 66
370 01 České Budějovice

Association of towns and villages in the region of the Nuclear Power Plant Temelín
Jiří Eisenvort, chairman
Náměstí Míru 2
375 01 Týn nad Vltavou

Calla – Association for the Rescue of Environment
Fráni Šrámka 35
370 04 České Budějovice

Civic Initiative of Environmental Protection
Česká 66
370 01 České Budějovice

Civic Association Prolife
Ing. Vl. Halama, CSc.
Písecká 372391 65 Bechyně

Movement Duha
Bratislavská 31
602 00 Brno

Regional Center ČSOP South-Bohemian Association of Environmental Protectors
P.O.B. 9
373 16 Dobrá Voda u Č. Budějovic

Civic Association for the Supervision of the Nuclear Power Plant Temelín
married couple Vlček's
Na sídlišti 494
387 73 Bavorov

Association of South-Bohemian Mothers (Jihočeské matky)
Česká 13
370 01 České Budějovice

Civic Association of South-Bohemian Fathers (Jihočeští tat'kové)
Pražská 1
370 04 České Budějovice

A written response on the sent document was obtained only from the Association Calla, České Budějovice (of May 9, 2001), giving the reasons for the absence of non-governmental organizations in the Environmental Impacts Assessment procedure of the Nuclear Power Plant Temelín, in accordance with the Melk Agreement.

3. Comments and suggestions for the Assessment of the Commission, risen by citizens or organizations from the Czech Republic, Austria and the Federal Republic of Germany

3. a CR

Comments risen via an e-mail address of the Commission:

Sender	Risen comments	Standpoint of the Commission
<p>1. Jiří Guth</p>	<p>- Reasons for choosing the suggested solution of the Nuclear Power Plant Temelín are missing; individual alternatives are not defined; he sets forth hypothetic impacts of the simultaneous displacing of thermal power stations.</p> <p>- Incomplete and confused chapter 2.6.2 – insufficient range and incomprehensible conclusion; he does not believe that handling of burned fuels represents a solvable problem.</p> <p>- Citing from the "European" methodology of</p>	<p>- The variants taken into account within energetic policies and assessed within SEA (SEVEN, MARCH.) are defined on pages 8 - 9 of the Assessment final version. The so-called zero variant was implicitly taken into account in all Assessment chapters (relevantly assigned to the chapter character). The variant of putting into operation as well as the variant of non-putting into operation and preservation were explicitly compared in the materials submitted to the Austrian party as the reference documents in May 2001. The variant considering shutdown of thermal power plants amounting the power of 2,000 MW is not hypothetic, but it was already implemented in connection with the Act on Environmental Protection of January 1, 1999. The following power plants are involved: Tušimice I, Mělník II and Ledvice. During putting the Temelín Nuclear Power Plant into commercial operation, powers will mainly be reduced in the thermal power plants Mělník and Chvaletice if necessary.</p> <p>- It is not a professional opinion. According to the concept of spent fuel handling, which will be approved by the government and for which relevant EIA is being elaborated, the permanent underground storage shall be ready in 2065. However, there are real presumptions that the technologies for spent fuel reprocessing with short half-life will be available until that time.</p> <p>- Quotation of the only European Union standard of 1997 is stated many</p>

	<p>EIA is missing.</p> <p>- The report focuses too much on technical details and does not answer basic questions.</p>	<p>times in the Assessment. However, it only relates to the construction project or intention assessment.</p> <p>- Orientation to professional details cannot be considered a negative feature of the Assessment; the author does not define his "main questions", maybe he should be satisfied with non-technical summary of the main problems for the public.</p>
<p>2. Bohumil Svoboda</p>	<p>- Has a probability of an accident in the power station Temelín been computed, into a specific number? I am thinking of specific statistical probability numbers for a radiation load or for specific theoretical histories of accidents.</p>	<p>- The safety of a contemporary Nuclear Power Plant is based on a deterministic approach, which means there is a file of projected accidents defined, which the Nuclear Power Plant resists. The probability approach is a new, additional approach exploring all the accidents including the ones with a very small probability. Probability Studies Assessments (PSA) were processed for the Nuclear Power Plant Temelín within the years 1995-96, and are being up-dated at the time being. The expectation is that the Nuclear Power Plant Temelín will comply with the recommendation MAAE, with the probability of a large radiation accident, releasing radiation into the environment, being less than 10^{-5} per year.</p>
<p>3. Stanislav Kovář</p>	<p>- Who has computed and who has signed a claim in the Report that Temelín in operation would resist a collision with a gun-carrying military air-fighter?</p>	<p>- This circumstance concerning the Nuclear Power Plant Temelín was declared in the project documentation of the Nuclear Power Plant Temelín handed over by the Soviet designer. The information was verified by computation by the Czech designer organization EGP, and the resistance of the Nuclear Power Plant Temelín against the fall of an aircraft has been affirmed.</p>

Three comments from the Czech public have been risen.

3. b Austria

Sender	Risen comments	Stand-point of the Commission
<p>1. Hausmaninger Herbst Wietrzyk (Rechtsanwälte – Gesellschaft mBH), Vienna (Standpoint of Lower Austria - St. Pölten – of June 18, 2001)</p>	<ul style="list-style-type: none"> - The documentation is insufficient, inconsistent and one can not associate oneself with its views. - The summary of the most important alternatives is missing, as well as the information on the selected principal solution regarding the environment. - Criteria for the transportation of nuclear materials are missing. - Measures for handling important accidents exceeding the borderlines (emergency plans) are missing. - The articles 5/part 3, 6, and 7 of the Regulation EU 85/337, in the wording of EU 97/11, are not met, and that is why EIA cannot be completed. 	<ul style="list-style-type: none"> - We cannot agree. The documentation is made exactly according to the scooping – the list agreed upon by an international commission including observers from Austria. Required supplements in the area of economy, energy policy of the Czech Republic and heavy accidents do not fall into the EIA scope. - The matter in question is an over-standard assessment. Nowhere within the EU, already completed equipments are being or will be assessed. The EIA process relates implicitly to projects, that is, constructions ”on a green field”, with various alternatives being chosen. The alternatives for the already constructed power station are not therefore actual. - Conditions of the transportation of nuclear materials are in the Czech Republic a subject to confidentiality. - Endangering of inhabitants in case of a heavy accident of the Nuclear Power Plant Temelín would happen into the distance of the outer zone of the Accident Planning, that is, within 13 kilometers. The exact distance would depend on the specific meteorological situation and the results of monitoring. In the countries bordering with the Czech Republic would arise, in case of this accident, the necessity of monitoring, and, in case of an extreme situation, the necessity of reducing consumption and distribution of food. - Considering that the matter in question is a completed construction, the articles of the Regulation are met entirely reasonably and sufficiently. However, the arguments can be raised that no legal regulations for completed constructions exist both in the EU and in the Czech Republic. In

	<ul style="list-style-type: none"> - The protocol of Melk has not been met. - EU standards set forth minimum requirements, which have been increased in some EU countries. - From the Lower Austria standpoint, it is not possible to improve the documentation; it is necessary to rewrite it. Conclusion may be submitted only when articles 5, 6 and 7 are fulfilled. - The Melk process is not closed, and the standpoint of Lower Austria country is only a preliminary one. <p>At the public hearing held in Vienna on June 26, 2001, Mr. Rauter, the representative of Nether Austria, presented the following requirements:</p> <ul style="list-style-type: none"> - In EIA study I miss the information whether the territory of Nether Austria would be affected in case of eventual accident and if so in which concentrations. 	<p>spite of that, an over-standard assessment of the completed construction was made.</p> <ul style="list-style-type: none"> - We cannot agree. Complying with the Melk agreements by the Czech Republic is as complete as possible. - According to the requirements of the Melk Protocol, the assessment was governed by the European Union Guidelines valid for this region. The scoping list was also approved by the Austrian representatives of the Commission. - The Czech party consider the documentation sufficient. According to the requirements of the Melk Protocol, the assessment was governed by the European Union Guidelines valid for this region. The scoping list was also approved by the Austrian representatives of the Commission. - The final Commission Standpoint was elaborated on July 15, 2001 and will be submitted to the Melk Process executives for decision. - Emergency planning is included in the chapter 2.7.3. of the Assessment (pages 192 - 206). Detailed information on serious accidents and emergency planning are included in the document called The Temelin Nuclear Power Plant Emergency Planning Zones Determination Principles and Methods, which also contains impacts assessment of beyond-design and serious accidents. This information was presented to the Austrian experts at the Workshop held in Prague on April 4, 2001 and it is also available on the Internet at http://www.mzv.cz/EIA. - The solution alternatives are a term, which is applied during EIA
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	<ul style="list-style-type: none"> - I miss assessment of solution alternatives if they are better (from the environmental point of view as well as from the economic point of view) - Additional investments will be spent in connection with Temelin - How will these investments be solved? Will the Czech Republic ask the European Commission for any support for this case? 	<p>assessment in the stage of project or intention. In case of the finished Temelin construction it is very debatable to assess the solution variants. Completion of the Temelin Nuclear Power Plant is based on the Czech Republic government decision and forms part of the Czech Republic Energy Policy. The said solutions do not consider the variant of shutdown or preservation of the nuclear power plant.</p> <p>- It is not clear, which additional investments Mr. Herbst was speaking about. If the investments related for instance to the turbine reparation, etc. are involved, the fund are included in the ČEZ investment project. The Czech Republic does not expect any support from the European Commission or any other countries.</p>
<p>2. Ing. Martin Litschauer Wienings 42 A-3812 Gr. Siegharts</p>	<ul style="list-style-type: none"> - Suppressing of relevant information on the Nuclear Power Plant Temelín. - The whole range of technical problems. - Concession for control systems has been issued without approval process. - Environmental impacts of the Nuclear Power Plant Temelín and EIA processes. 	<ul style="list-style-type: none"> - The information on the Nuclear Power Plant Temelín have not been suppressed, excluding those being subjected to a business confidentiality of contractual companies. There is a law on the right of information provision in effect in the Czech Republic. - In the Nuclear Power Plant Temelín, which is a very complex technical object, technical problems usual for such a type of constructions may occur. However, no of these problems will influence nuclear safety, and consequently the safety and health of the neighboring inhabitation. - Readiness of the control system has been checked out and verified even before launching of its operation, in accordance with the Nuclear Act and relevant regulations. - The Environmental Impacts Assessment of the Nuclear Power Plant Temelín has been processed and presented in the report. Its content

		complies with EU directives and a structure of the report, which has been agreed upon with the Austrian party.
<p>3. Mag. Peter Haftner Auf der Schanz 93 2013 Göllersdorf,</p> <p>DI KAINZ Martina Weiner Str. 54 A-3100 St. Pölten</p>	<ul style="list-style-type: none"> - Alternative ways of solution are missing in the EIA documentation. - Into which extend will the energy from the Nuclear Power Plant Temelín be necessary? - Comparing to western power stations, the risk of an accident in the Nuclear Power Plant Temelín is considerably higher. - Measures for case of accidents are missing. 	<ul style="list-style-type: none"> - Chapter No. 1.2. deals with the alternatives. - It was not the task of the Commission to deal with economic and energy problems. - Considering the fact that the Nuclear Power Plant Temelín is the same type as the majority of Nuclear Power Plants in the west – the PWR, the risk of an accident is comparable. This was proved from a deterministic standpoint in safety reports, and from a probability standpoint in probability assessment studies of the Nuclear Power Plant Temelín. - Chapter 2.7.3 of the Assessment deals with accident planning.

<p>4. Brandner Gottfried</p>	<p>A letter to the Czech Republic inhabitants:</p> <ul style="list-style-type: none"> - All the questions need to be clarified before putting the Nuclear Power Plant Temelín into operation. - 13-hours blockade was justified and served as a protest against non-solving and leaving out the safety questions. 	<ul style="list-style-type: none"> - In accordance with Nuclear Law, the required documents have been submitted (especially a safety report) confirming that the safety is provided for. The Nuclear Power Plant Temelín is a subject to a continual supervision by the independent body of supervision in the Czech Republic – the State Office for Nuclear Safety. - Blockages of borders are not a constructive solution within the dialog on Temelín between the Czech Republic and Austria. On the contrary, they represent clear breach of Melk agreements.
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Four comments have been risen.

3. c The Federal Republic of Germany

Sender	Risen comments	Standpoint of the Commission
<p>1. Greens in the Bavarian parliament D-81627 München</p>	<ul style="list-style-type: none"> - Insufficient documentation on the Nuclear Power Plant Temelín. - Needlessness of the construction considering the surplus of electricity in the Czech Republic. - The requirement of supplementation to the 	<ul style="list-style-type: none"> - The scope, content and depth of the safety documentation for the Nuclear Power Plant Temelín has been made in accordance with the recommendation NCR (USA) - Reg. Guide 1.70 and the like, and complies with international recommendations (International Agency for Nuclear Energy). The documentation has been evaluated by the independent body of supervision – the State Office for Nuclear Safety. - The surplus of energy will be eliminated within five years by the increased consumption in the Czech Republic. - The requirement does not sets what specifically should be supplemented

	documentation.	in the documentation.
<p>2. Dr. Axel Berg A member of the Bavarian parliament</p>	<p>- A danger resulting from the operation of the Soviet type of a reactor despite of its post-equipping with western safety systems.</p> <p>- Nobody in the Federal Republic of Germany would allow for the running of this type of a reactor.</p> <p>- In case of an accident, if eastern winds are blowing, the area in a distance up to 300 km from the Czech borders would be endangered.</p>	<p>- The risk of an accident of the VVER reactors is similar to other Nuclear Power Plants with a PWR type of reactors. The Nuclear Power Plant Temelín with the applied measures for enhancement of the safety is comparable to other Nuclear Power Plants in Europe.</p> <p>- Approval processes, specified documentation and technical requirements and their demands differ in various EU countries. A Nuclear Power Plant of the Russian project post-equipped with western equipment has been approved and run in Finland (Loviisa). Nuclear safety is a responsibility of individual countries.</p> <p>- Endangering of inhabitants in case of a heavy accident of the Nuclear Power Plant Temelín would happen into the distance of the outer zone of the Accident Planning, that is, within 13 kilometers. The exact distance would depend on the specific meteorological situation and the results of monitoring. In the countries bordering with the Czech Republic would arise, in case of this accident, the necessity of monitoring, and, in case of an extreme situation, the necessity of reducing consumption and distribution of food.</p>
<p>3. Annelise Schade The Office of the Federal State Wunsiedel 95106 Selb</p>	<p>- Hazardousness of using the nuclear energy itself.</p> <p>- In spite of securing by western technology, there are frequent defects emerging.</p>	<p>- Studies of risks, which a man is commonly exposed to, have proved that a risk of an accident of a Nuclear Power Plant is by several degrees lower than other risks.</p> <p>- The period of commencement of the operation serves to the verifying of the operation of equipment and uncovering defects before starting the commercial operation itself. During the commencement period of western Nuclear Power Plants defects occurred, too. The amount of defects arisen by now, during the commencement period of the Nuclear Power Plant Temelín, is low and their safety relevance is small.</p>

	<p>- The distance of the reactor of only 200 km from his home.</p>	<p>- Endangering of inhabitants in case of a heavy accident of the Nuclear Power Plant Temelín would happen into the distance of the outer zone of the Accident Planning, that is, within 13 kilometers. The exact distance would depend on the specific meteorological situation and the results of monitoring. In the countries bordering with the Czech Republic would arise, in case of this accident, the necessity of monitoring, and, in case of an extreme situation, the necessity of reducing consumption and distribution of food.</p>
<p>4. A standard cyclostyled letter type D</p>	<p>- All her family feels to be jeopardized by the operation of this "Old Soviet relic"</p> <p>- Fear about storing of burned fuels.</p> <p>- The operation of the power station violates the General Declaration on the Human Rights issued by OSN in December, 1948</p>	<p>- The risk of an accident of the VVER reactors is similar to other Nuclear Power Plants with a PWR type of reactors. The Nuclear Power Plant Temelín with the applied measures for the enhancement of the safety is comparable to other Nuclear Power Plants in Europe.</p> <p>- Storing of the burned fuels of the Nuclear Power Plant Temelín will be secured in the same way as at other Nuclear Power Plants of this type: at the beginning at the Nuclear Power Plant (for twelve years), afterwards in an intermediate storage, and finally in a permanent waste disposal site where geological explorations of selected localities have been conducted. Provided the construction will be necessary (technologies of remaking waste are entirely realistic), then the construction shall be feasible in 65 years in the Czech Republic.</p> <p>- We do not know which article of the Declaration on the Human Rights is not met as result of commencing the Nuclear Power Plant Temelín.</p>

<p>Number of signatures: 5</p>	<p>- The requirement of verification of the Nuclear Power Plant Temelín in accordance with the international standards.</p>	<p>- Regulations on the nuclear safety and radiation protection being in effect in the Czech Republic are consequent upon international recommendations (MAAE, ICRP) and are fully comparable with the ones in other countries running Nuclear Power Plants too.</p>
<p>5. A standard cyclostyled letter type C Number of signatures: 96</p>	<p>- Fears about lives of our children endangered by the operation of this junk in a form of the Nuclear Power Plant Temelín – shut down the Nuclear Power Plant Temelín!</p>	<p>- The apprehensions are noted, they are unjustified.</p>
<p>6. A standard cyclostyled letter type E</p>	<p>Protest against putting of the Nuclear Power Plant Temelín into operation</p> <p>- Combination of the outdated Soviet technology "enhanced" with the American-European technology is problematic.</p> <p>- More than twelve defects since putting the Nuclear Power Plant Temelín into a trial operation.</p> <p>- What is going to happen when the Nuclear Power Plant Temelín will be running on 100 % ?</p> <p>- Why electricity should be taken from the</p>	<p>- The risk of an accident of the VVER reactors is similar to other Nuclear Power Plants with a PWR type of reactors. The Nuclear Power Plant Temelín with the applied measures for the enhancement of the safety is comparable to other Nuclear Power Plants in Europe. The approval processes, specified documentation and technical requirements and their demands differ in various EU countries. A Nuclear Power Plant of the Russian project post-equipped with western equipment has been approved and run in Finland (Loviisa). Nuclear safety is a responsibility of individual countries.</p> <p>- The amount of defects since the beginning of activation is not, comparing to other units, too high. It is not a trial operation but trials and tests on putting into operation.</p> <p>- The amount of performance does not mean increasing a risk. Performance on 100 % is, from the standpoint of the stability, the best.</p> <p>- There is no understandable connection. In accordance with the energy</p>

<p>Number of signatures: 79</p>	<p>Nuclear Power Plant Temelín when adaptations of Czech mines supplying coal to the Arzeberg power station have been made?</p> <p>- The issue of storing the nuclear waste.</p>	<p>policy of the Czech Republic, complete self-sufficiency of the state is counted on. Import of electricity is out of the question here because it would bring about another debiting of the State budget of the Czech Republic.</p> <p>- Storing of the burned fuels of the Nuclear Power Plant Temelín will be secured in the same way as at other Nuclear Power Plants of this type: at the beginning at the Nuclear Power Plant (for twelve years), afterwards in an intermediate storage, and finally in a permanent waste disposal site, which is being prepared in the meantime.</p>
<p>7. A standard cyclostyled letter type G</p> <p>Number of signatures: 4</p>	<p>- In the Federal Republic of Germany, the Nuclear Power Plant Temelín would not be allowed to be operated, despite of technical adjustments.</p> <p>- Irresponsibility of politicians and operators regarding its operation.</p> <p>- Who is going to assume the responsibility of an accident – as the case of Černobyl has demonstrated – nobody!</p> <p>- Requirement of shutting down the operation and demolishing the power station.</p>	<p>- Approval processes, specified documentation and technical requirements and their demands differ in various EU countries. A Nuclear Power Plant of a Russian project post-equipped with western equipment has been approved and running in Finland (Loviisa). Nuclear safety is a responsibility of individual countries.</p> <p>- Responsibility of the Czech Republic and the operator has been proved by the fact that the range of changes, striving for the increasing of safety, has been accepted, that caused raising of prices and the delay in putting of the power station into operation.</p> <p>- Temelín is by no means Černobyl. The accident of Černobyl's type is not possible at the Nuclear Power Plant Temelín. The range of heavy accidents is considerably lower. The Czech Republic has signed the Convention on the compensation of the damages caused by a nuclear accident.</p> <p>- Shutting down the operation and examination of the power station is not justified and would bring about considerable financial loss to its operator and the energetic dependency for about five years to the national economy.</p>
<p>8. A standard cyclostyled letter</p>	<p>- The risk of the Nuclear Power Plant Temelín in comparison with Černobyl.</p>	<p>- Temelín is by no means Černobyl. The accident of Černobyl's type is not possible at the Nuclear Power Plant Temelín. The range of heavy accidents</p>

<p>9. A standard cyclostyled letter type F</p> <p>Number of signatures: 2</p>	<ul style="list-style-type: none"> - Endangering of the inhabitants of the NPP Temelin despite of its post-equipment with American technology. - Uselessness of the Nuclear Power Plant Temelín owing to the current surplus of electricity in the Czech Republic. 	<ul style="list-style-type: none"> - The risk of an accident of the VVER reactors is similar to other Nuclear Power Plants with a PWR type of reactors. The Nuclear Power Plant Temelín with the applied measures for the enhancement of the safety is comparable to other Nuclear Power Plants in Europe. - Pursuant to the Energy policy of the Czech Republic, the Nuclear Power Plant will be needed within five years for covering of the domestic consumption.
<p>10. A standard cyclostyled letter type I</p> <p>Number of signatures: 2</p>	<ul style="list-style-type: none"> - The Nuclear Power Plant Temelín would not meet, in many cases, requirements of German safety standards. - Detailed listing of objections compared to the submitted documentation. - Both the pressure-circulation reactors WWER 1000/320 show many shortages in comparison with western types. - By a fusion of Soviet, US, Czech and European standards, the experiment of immeasurable consequences has been developing. - Considering a large potential of energy savings in the Czech Republic, Temelín is unnecessary. 	<ul style="list-style-type: none"> - Approval processes, specified documentation and technical requirements and their demands differ in various EU countries. A Nuclear Power Plant of a Russian project post-equipped with western equipment has been approved and running in Finland (Loviisa). Nuclear safety is a responsibility of individual countries. - It is not obvious whether a public had any opportunity to read the Assessment of the Commission at least. - The Nuclear Power Plant VVER – 1000, after applying the measures striving for increasing of the safety, is fully comparable with other PWR units in the world. - No fusion of standards occurred: the Nuclear Power Plant was projected in compliance with Russian standards, the safety has been increased in accordance with US standards and it was licensed in accordance with Czech laws and standards. No European standards exist. - In accordance with the supposed grow of energy consumption, the power station will certainly be necessary.

<p>11. Dr.med.M. Krätzsmar 94343 Wiesenfelden</p>	<p>The letter of three lines: - Based upon various assessments, the Nuclear Power Plant Temelín represents a risk, and therefore we urgently request it not being put into operation.</p>	<p>- The pronouncement has been noted</p>
<p>12. Käthe Krejcik Peter Heulein Str. 90443 Norimberk</p>	<p>Three lines written on a postal card: - I am against putting the Nuclear Power Plant Temelín into the operation!</p>	<p>- The pronouncement has been noted</p>
<p>13. Helga Zirlick Zeisigweg 2A 63150 Heusenstamm Germany</p>	<p>In the center of a page is written only: STOP TEMELÍN !</p>	<p>- The pronouncement has been noted</p>
<p>14. Ruth Boshoc (?) Reichenahall</p>	<p>What a danger – Temelín – jeopardize the all ! (written by hand entirely illegibly on four lines)</p>	<p>- We take it into consideration</p>
<p>15. Farní úřad Sv. Jana Kirchplatz 4 94474 Vilshofen</p>	<p>The list with signatures manifesting worries and protests against the operating of the Nuclear Power Plant Temelín.</p>	<p>- We take it into consideration</p>
<p>16. Nemmer Roßbergerstr.5 93468 Miltach</p>	<p>- Protest of the writer and his family against putting of the Nuclear Power Plant Temelín into the operation (with signatures).</p>	<p>- We take it into consideration</p>
<p>17. Sven Wahl a student Agricolastr. 14/16 09599 Freiberg Germany</p>	<p>- Objections against the operation of the Nuclear Power Plant Temelín within the testing on the tolerance towards the environment.</p> <p>- The trial operation of the Nuclear Power Plant Temelín has been so far characterized by many malfunctions and shortages, which is the</p>	<p>- The Environmental Impact Assessment of the Nuclear Power Plant Temelín has been conducted on over-standard level based upon the good will of the Czech Republic, and there is no connection with the schedule of putting it into operation.</p> <p>- The period of commencement serves to the verification of the operation of equipment and uncovering of defects before starting commercial operation itself. During the commencement of western Nuclear Power Plants defects occurred, too. The amount of defects arisen during the</p>

	<p>evidence of insufficient operational security.</p> <ul style="list-style-type: none"> - The Nuclear Power Plant Temelín is not necessary for the supplies of energy into the Czech Republic, the electricity is destined primarily for export. - Submitted documentation does not comply with the requirements on the tolerance towards the environment, and is therefore unacceptable. - Too short delimitation of the emergency zones 5 and 13 km seems insufficiently small. - Insufficient attention paid to the question of storing of burned fuels. - Based on the above mentioned facts, do not put the Nuclear Power Plant Temelín into operation and stop further steps towards commencement. 	<p>commencement of the Nuclear Power Plant Temelín up to now is low, and their safety relevance is small.</p> <ul style="list-style-type: none"> - Within five years the power station will be necessary for self-sufficiency of the state in covering of its energy needs. - The submitted EIA documentation is written in accordance with EU standards valid for this area. - The most modern analytical means have been used in determining the zones of emergency planning: studies PSA of the 1st and 2nd levels, and an assessment of heavy accidents by the means of adopted codes from the U.S.A. - Storing of burned fuels of the Nuclear Power Plant Temelín will be secured in the same way as at other Nuclear Power Plants of this type: at the beginning at the Nuclear Power Plant (for twelve years), afterwards in an intermediate storage, and finally in a permanent waste disposal site, which is being prepared in the meantime. - Cited facts are not demonstrative or true.
<p>18. David g. Goliath Prälat-Zistl-Str. 6 80331 München</p>	<ul style="list-style-type: none"> - The emanation of radioactivity into the environment - Endangering of life and health - Putting properties into risk 	<p>The effect of the Nuclear Power Plant Temelín in releasing of radioactivity into the environment, possible endangering of lives and health of the public and putting properties into risk is very low and can be compared to other Nuclear Power Plants running in Europe. This has been confirmed by the EIA study as well.</p>

<p>19. Richard Wildner Liliane Spandl-Wildner 64853 Otzberg Germany</p>	<ul style="list-style-type: none"> - Fears about the operation of the Nuclear Power Plant Temelín. - Peaceful using of the atom is connected with a risk (see Černobyl). - The reactor in the Nuclear Power Plant Temelín would not obtain permission for operating in Germany. 	<ul style="list-style-type: none"> - Studies of risks, which a man is commonly exposed to, have proved that a risk of an accident of a Nuclear Power Plant is by several degrees lower than other risks. - Temelín is by no means Černobyl. The accident of Černobyl's type is not possible at the Nuclear Power Plant Temelín. The range of heavy accidents is considerably lower. The Czech Republic has signed the Convention on the compensation of the damages caused by a nuclear accident. - Approval processes, specified documentation and technical requirements and their demands differ in various EU countries. A Nuclear Power Plant of a Russian project post-equipped with western equipment has been approved and running in Finland (Loviisa). Nuclear safety is a responsibility of individual countries.
<p>20. Landratsamt Pasov (a letter sent by Civic Forum Umwelt)</p>	<ul style="list-style-type: none"> - There is no zero alternative in the documentation. - Justification of energy need from the Nuclear Power Plant Temelín in the Czech Republic is missing. - How to solve cases of heavy accidents? - Request for carrying out the tests on the tolerance towards the environment before putting the Nuclear Power Plant Temelín into 	<ul style="list-style-type: none"> - In a case of already completed construction, no zero alternative can be spoken of. - This is a matter of Energy policy, which has been approved by the government of the Czech republic. - The Czech party has organized a one-day seminar on 4 April, 2001 in Prague, focused on the possibility of heavy accidents. The seminar has proved that the Czech party has sufficient means for analysis of heavy accidents and their consequences, and that prepared emergency plans are capable of managing the improbable situations. - The completed EIA fulfills this requirement.

	operation.	
21. Max Duschl Saghäuser 23 94118 Jandelsbrunn	<p>- 20 defects in the Nuclear Power Plant Temelín does not make it operation-capable.</p> <p>- A Russian reactor does not meet safety requirements.</p> <p>- To rebuild the Nuclear Power Plant Temelín in accordance with the requirements of current technology; in case it is not possible, to shut down it.</p> <p>- We are living in the area where the borders of three countries meet (the zone of death number 1).</p>	<p>- The period of a commencement serves to the verification of the operation of equipment and uncovering of defects before starting commercial operation itself. During the commencement of western Nuclear Power Plants defects occurred, too. The amount of defects occurred by now during the commencement period of the Nuclear Power Plant Temelín is low, and their safety relevance is small.</p> <p>- Approval processes, specified documentation and technical requirements and their demands differ in various EU countries. A Nuclear Power Plant of a Russian project post-equipped with western equipment has been approved and running in Finland (Loviisa). Nuclear safety is a responsibility of individual countries.</p> <p>- The enhancement of the safety of the Nuclear Power Plant has already been accomplished in accordance with demands of the Czech Inspection body and of international recommendation.</p> <p>- The shortest distance of the Nuclear Power Plant Temelín from the borders with Austria is about 55 km. Emergency analyses have proved that the population of the bordering countries would not be endangered in case of improbable accidents.</p>
22. President okresního sněmu D. Bavorska 84028 Landshut	<p>- To check out safety standards by GRS companies and western experts.</p> <p>- Provided the safety standards are not conformed to, shut down supplies of electricity from the Nuclear Power Plant Temelín.</p>	<p>- Based on the bilateral cooperation between the Czech Republic and the Federal Republic of Germany, the company GRS has already examined the selected safety problems of the Nuclear Power Plant Temelín, and expressed an agreement with the solution.</p> <p>- Safety standards have been met.</p>
23.	- Nuclear Power Plant Temelín does not even begin to	- No EU standards exist.

<p>Umweltinstitut Mníchov Schwere-Reiter-Str.35 80797 München</p>	<p>meet EU standards.</p> <ul style="list-style-type: none"> - Heave accidents cannot be eliminated. - During the period of trial operation of the Nuclear Power Plant Temelín many defects had been revealed. - The risk of an accident of the Nuclear Power Plant Temelín is higher than at western power stations. - The electricity from the Nuclear Power Plant Temelín is destined primarily for export. - Although a zero alternative has been taken into account, it has been left out after the elections in 1998. - Marginal values of the radiation on inhabitants are carelessly calculated. - Requirement to expand the scope of contamination at an accident. 	<ul style="list-style-type: none"> - Heavy accidents are not probable, have a limited scope and will not endanger neighboring population. - The period of a commencement serves to the verification of the operation of equipment and uncovering of defects before starting commercial operation itself. During the commencement of western Nuclear Power Plants defects occurred, too. The amount of defects occurred by now during the commencement period of the Nuclear Power Plant Temelín is low, and their safety relevance is small. - The risk of an accident of VVER reactors is similar to other Nuclear Power Plants with a PWR type of reactors. The Nuclear Power Plant Temelín with the applied measures for the enhancement of the safety is comparable to other Nuclear Power Plants in Europe. - We cannot agree, within five years the power station shall secure the energy self-sufficiency of the Czech Republic. - The resolution of the government of the Czech Republic No. 472 of 1999 assigned to finish the Nuclear Power Plant. - Marginal values fully comply with international recommendations (MAAE, ICRP). - Endangering of inhabitants in case of a heavy accident of the Nuclear Power Plant Temelín would happen into the distance of the outer zone of the Accident Planning, that is, within 13 kilometers. The exact distance would depend on the specific meteorological situation and the results of monitoring. In the countries bordering with the Czech Republic would arise, in case of this accident, the necessity of monitoring, and, in case of an extreme situation, the necessity of reducing consumption and distribution of food.
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	<ul style="list-style-type: none"> - Insufficient attention is being paid to the issue of storing of radioactive waste. - There is no notion about a crash of a plain to the Nuclear Power Plant Temelín 	<ul style="list-style-type: none"> - Radioactive waste including burned fuels is processed and stored in the power station, in the similar way like in other Nuclear Power Plants in the world. - The risk of a crash of a plain to the Nuclear Power Plant Temelín was noticed in the report, and it was analyzed: its probability is very low, and besides that, the power station shall resist the fall of a military aircraft.
<p>24. Detlef Gebauer Grünbergerstrasse 23 D-10243 Berlin</p>	<ul style="list-style-type: none"> - Worries about frequent accidents in the Nuclear Power Plant Temelín. - Is not there any other possibility of getting energy other than the Nuclear Power Plant Temelín? - What are the conceptions about storing burned fuel? 	<ul style="list-style-type: none"> - Studies of risks, which a man is commonly exposed to, have proved that a risk of an accident of a Nuclear Power Plant is by several degrees lower than other risks. - Possibilities of acquiring energy in the Czech Republic were analyzed in detail in the Energetic policy of the Czech Republic in 2000. The Czech Republic utilizes the energy from coal, imports oil and gas. It has no possibility of utilizing watercourses like Austria. Other renewable resources have a limited potentiality. - Storing of burned fuels of the Nuclear Power Plant Temelín will be secured in the same way as at other Nuclear Power Plants of this type: at the beginning in the Nuclear Power Plant (for twelve years), afterwards in an intermediate storage, and finally in a permanent waste disposal site, the project of which is being prepared in the meantime. The construction in the Czech Republic is feasible in 65 years.

<p>25. Familie Heinzl-Berndt Karl-Marx-Str.72 14482 Potsdam Germany</p>	<p>A family disturbed by the construction of the Nuclear Power Plant Temelín.</p> <ul style="list-style-type: none"> - According to German standards, the Nuclear Power Plant Temelín would not be allowed to be operated. - To follow the path of energy savings instead. - Better to choose using alternative energies. 	<p>Apprehensions have been noted, they are not justified.</p> <ul style="list-style-type: none"> - Approval processes, specified documentation and technical requirements and their demands differ in various EU countries. A Nuclear Power Plant of a Russian project post-equipped with western equipment has been approved and running in Finland (Loviisa). Nuclear safety is a responsibility of individual countries. - Energy savings represent a part of the Energetic policy of the Czech Republic. The Czech Republic utilizes the energy from coal, imports oil and gas. It has no possibility of utilizing watercourses like Austria. Other renewable resources have limited potentiality. - Possibility of using alternative energy recourses is limited and does not provide for the necessary capacity.
<p>26. Landratsamt Wunsiedel i.Fichtelgebirge Wunsiedel</p>	<p>Two letters were sent to the office.</p>	<ul style="list-style-type: none"> - We take it into consideration
<p>27. Annelise Schade Hölderlinweg 95100 Selb</p>	<ul style="list-style-type: none"> - Nuclear energy is not a reliable resource (frequent defects in the power stations in the U.S.A. and in Černobyl). - Frequent occurrences of defects in the Nuclear Power Plant Temelín, which cannot be removed even with western technology installed. 	<ul style="list-style-type: none"> - Reliability of Nuclear Power Plants in the world is sufficient and keeps increasing within the last years (utilization factor 80 – 90 %). Number and relevancy of defects in Nuclear Power Plants has also a decreasing tendency (see the statistics). - The period of a commencement serves to the verification of the operation of equipment and uncovering of defects before starting commercial operation itself. During the commencement of western Nuclear Power Plants defects occurred, too. The amount of defects occurred by now during the commencement period of the Nuclear Power Plant Temelín is low, and their safety relevance is small.

	<p>- We live 200 km from the Nuclear Power Plant Temelín, which means our lives will be endangered in case of an accident.</p>	<p>- Endangering of inhabitants in case of a heavy accident of the Nuclear Power Plant Temelín would happen into the distance of the outer zone of the Accident Planning, that is, within 13 kilometers. The exact distance would depend on the specific meteorological situation and the results of monitoring. In the countries bordering with the Czech Republic would arise, in case of this accident, the necessity of monitoring, and, in case of an extreme situation, the necessity of reducing consumption and distribution of food.</p>
<p>28. Without the address</p>	<p>- I am rising OBJECTIONS against the operation of the Nuclear Power Plant Temelín</p>	<p>Objections have been noted, they are not justified.</p>
<p>29. Landratsamt Wunsiedel i. Fichtelgebirge</p>	<p>Three protest letters have been sent to the Office</p>	<p>- We take it into consideration</p>
<p>30. Hans a Heidi Goller Ringstrasse 52 D-95100 Selb</p>	<p>- Nuclear energy is not a reliable resource (frequent defects in the power stations in the U.S.A. and in Černobyl).</p> <p>- Frequent occurrences of defects in the Nuclear Power Plant Temelín which cannot be removed even with western technology installed.</p> <p>- We live 200 km from the Nuclear Power Plant Temelín, which means our lives will be endangered in case of an accident.</p>	<p>- Reliability of Nuclear Power Plants in the world is sufficient and keeps increasing within the last years (utilization factor 80 – 90 %). Number and relevancy of defects in Nuclear Power Plants has also decreasing tendency (see statistics).</p> <p>- The period of a commencement serves to the verification of the operation of equipment and uncovering of defects before starting commercial operation itself. During the commencement of western Nuclear Power Plants defects occurred, too. The amount of defects occurred by now during the commencement period of the Nuclear Power Plant Temelín is low, and their safety relevance is small.</p> <p>- Endangering of inhabitants in case of a heavy accident of the Nuclear Power Plant Temelín would happen into the distance of the outer zone of the Accident Planning, that is within 13 kilometers. The exact distance would depend on the specific meteorological situation and the results of monitoring. In the countries bordering with the Czech Republic would arise, in case of this accident, the necessity of monitoring, and, in case of an extreme situation, the necessity of reducing consumption and</p>

		distribution of food.
<p>31. Fuchs Wiltraut Feldstrasse 3 95632 Wunsiedel</p>	<p>- Nuclear energy is not a reliable resource (frequent defects in the power stations in the U.S.A. and in Černobyl).</p> <p>- Frequent occurrences of defects in the Nuclear Power Plant Temelín which cannot be removed even with western technology installed.</p> <p>- We live 200 km from the Nuclear Power Plant Temelín, which means our lives will be endangered in case of an accident.</p>	<p>- Reliability of Nuclear Power Plants in the world is sufficient and keeps increasing within the last years (utilization factor 80 – 90 %). Number and relevancy of defects in Nuclear Power Plants has also decreasing tendency (see statistics).</p> <p>- The period of a commencement serves to the verification of the operation of equipment and uncovering of defects before starting commercial operation itself. During the commencement of western Nuclear Power Plants defects occurred, too. The amount of defects occurred by now during the commencement period of the Nuclear Power Plant Temelín is low, and their safety relevance is small.</p> <p>- Endangering of inhabitants in case of a heavy accident of the Nuclear Power Plant Temelín would happen into the distance of the outer zone of the Accident Planning, that is within 13 kilometers. The exact distance would depend on the specific meteorological situation and the results of monitoring. In the countries bordering with the Czech Republic would arise, in case of this accident, the necessity of monitoring, and, in case of an extreme situation, the necessity of reducing consumption and distribution of food.</p>
<p>32. Hans Hilbert Bauvereinstrasse 10 95100 Selb</p>	<p>- Nuclear energy is not a reliable resource (frequent defects in the power stations in the U.S.A. and in Černobyl).</p> <p>- Frequent occurrences of defects in the Nuclear Power Plant Temelín which cannot be removed even with western technology installed.</p>	<p>- Reliability of Nuclear Power Plants in the world is sufficient and keeps increasing within the last years (utilization factor 80 – 90 %). Number and relevancy of defects in Nuclear Power Plants has also decreasing tendency (see statistics).</p> <p>- The period of a commencement serves to the verification of the operation of equipment and uncovering of defects before starting commercial operation itself. During the commencement of western Nuclear Power Plants defects occurred, too. The amount of defects occurred by now during the commencement period of the Nuclear Power Plant Temelín is small.</p>

	<p>- We live 200 km from the Nuclear Power Plant Temelín, which means our lives will be endangered in case of an accident.</p>	<p>- Endangering of inhabitants in case of a heavy accident of the Nuclear Power Plant Temelín would happen into the distance of the outer zone of the Accident Planning, that is within 13 kilometers. The exact distance would depend on the specific meteorological situation and the results of monitoring. In the countries bordering with the Czech Republic would arise, in case of this accident, the necessity of monitoring, and, in case of an extreme situation, the necessity of reducing consumption and distribution of food.</p>
<p>33. Familie Wagner Erich + Johanna + Simon + Fabian Moosdorfer Weg 9 94330 Aiterhofen</p>	<p>- Asks not to put the Nuclear Power Plant Temelín into operation:</p> <p>- Worries about the construction, which does not comply with technical standards.</p> <p>- Her conviction is being confirmed by frequent daily-repeated defects.</p> <p>- Construction of the Nuclear Power Plant Temelín is inconceivable since 90 % of the produced electricity is destined to be exported into Germany.</p> <p>- Irradiation does not respect borders, lives must be preserved.</p> <p>- One Černobyl was enough !</p>	<p>- Putting into operation is being executed in accordance with resolution of the Government of the Czech republic No. 472 of 1999</p> <p>- The state of the Nuclear Power Plant Temelín complies with technical standards used in nuclear energy in the world.</p> <p>- The period of a commencement serves to the verification of the operation of equipment and uncovering of defects before starting commercial operation itself. During the commencement of western Nuclear Power Plants defects occurred, too. The amount of defects occurred by now during the commencement period of the Nuclear Power Plant Temelín is low, and their safety relevance is small.</p> <p>- 90 % export of energy into the Federal republic of Germany is not conceivable.</p> <p>- The Nuclear Power Plant Temelín, as well as all the power stations in EU, will by no means irradiate neither the biosphere nor citizens.</p> <p>- Temelín is by no means Černobyl. The accident of Černobyl's type is not possible at the Nuclear Power Plant Temelín. The range of heavy accidents is considerably lower. The Czech Republic has signed the Convention on the compensation of the damages caused by a nuclear accident.</p>

<p>34. Günther Geyer Großwendern 40 95168 Marktleuthen</p>	<p>- The Nuclear Power Plant Temelín does not secure standard operation, which is being confirmed by everyday frequent defects during a trial operation.</p> <p>- The solution might be using alternative energies.</p> <p>- Irresponsibility of leaving (mountains of radioactive waste) to future generations.</p>	<p>- The period of a commencement serves to the verification of the operation of equipment and uncovering of defects before starting commercial operation itself. During the commencement of western Nuclear Power Plants defects occurred, too. The amount of defects occurred by now during the commencement period of the Nuclear Power Plant Temelín is small.</p> <p>- Possibility of using alternative energy recourses is limited, and does not provide for the necessary capacity.</p> <p>- The amount of radioactive waste is very small in comparison with the waste from other resources. The Nuclear Power Plant does not release CO₂ and therefore does not contribute to a greenhouse effect. Nuclear waste, including burned fuel, has been processing in the power station and storing in a similar way like in other Nuclear Power Plants in the world.</p>
<p>35. A letter without address and unreadable signature</p>	<p>- The future of our children is in danger as they will have to live with the filth Nuclear Power Plant Temelín.</p> <p>- Has Černobyl been forgotten?</p>	<p>- The risk of an accident of VVER reactors is similar to other Nuclear Power Plants with a PWR type of reactors. The Nuclear Power Plant Temelín with the applied measures for the enhancement of the safety is comparable to other Nuclear Power Plants in Europe. Studies of risks, which a man is commonly exposed to, have proved that a risk of an accident of a Nuclear Power Plant is by several degrees lower than other risks.</p> <p>- Temelín is by no means Černobyl. The accident of Černobyl's type is not possible at the Nuclear Power Plant Temelín. The range of heavy accidents is considerably lower. The Czech Republic has signed the Convention on the compensation of the damages caused by a nuclear accident.</p>

<p>36. Gudrun Fluchet Birkenstrasse 8 D-93049 Regensburg</p>	<p>- Protest against operating of the Nuclear Power Plant Temelín because of its frequent defects.</p> <p>- To shut down the construction.</p>	<p>- The period of a commencement serves to the verification of the operation of equipment and uncovering of defects before starting commercial operation itself. During the commencement of western Nuclear Power Plants defects occurred, too. The amount of defects occurred by now during the commencement period of the Nuclear Power Plant Temelín is low, and their safety relevance is small.</p> <p>- Construction of the 1st unit is already completed, the 2nd unit is being completing. There is no reason for stopping the construction. The construction is in accordance with the resolution of the Government of the Czech republic No. 472 of 1999.</p>
<p>37. Wolfgang König Am Rosengarten 10 81547 München</p>	<p>- Radioactive waste cannot be removed, therefore the writer raises a protest.</p>	<p>- Nuclear waste including burned fuel is being processed and stored in the power station in a similar way like in other Nuclear Power Plants run in the world.</p>
<p>38. Dietmar Luckner Donaugasse 14a 94315 Straubing</p>	<p>- Unreliable technology.</p> <p>- Combination of an old Russian technology with modern western components, representing a danger for surrounding environment.</p> <p>- Endangering of thousands of people living in the surrounding neighborhood.</p>	<p>- Reliability of the Nuclear Power Plant Temelín's equipment is comparable with those in other Nuclear Power Plants in the world, and is a subject to a permanent control by its operator.</p> <p>- Approval processes, specified documentation, and technical requirements and their demands differ in various EU countries. A Nuclear Power Plant of the Russian project post-equipped with western equipment has been approved and running in Finland (Loviisa). Nuclear safety is a responsibility of individual countries.</p> <p>- Endangering of inhabitants in case of a heavy accident of the Nuclear Power Plant Temelín would happen into the distance of the outer zone of the Accident planning, that is, within 13 kilometers. The exact distance would depend on the specific meteorological situation and the results of monitoring. In the countries bordering with the Czech Republic would arise, in case of this accident, the necessity of monitoring, and, in case of an extreme situation, the necessity of reducing consumption and</p>

	<ul style="list-style-type: none"> - Provided the whole-European safety standards were in effect, Temelín would never be allowed be put into operation. 	<p>distribution of food.</p> <ul style="list-style-type: none"> - Regulations on the nuclear safety and radiation protection in effect in the Czech Republic are based on the international recommendations (MAAE, ICRP) and are fully comparable with the ones in other countries running Nuclear Power Plants too.
<p>39. Elmar Hartl VdK-Str.2 940078 Freyung</p>	<ul style="list-style-type: none"> - Defects on steam lines may have negative effects to control items because these do not have sufficient distances among each other. - A portion of the cement for Nuclear Power Plant Temelín was used for private purposes. - Inappropriate method of alloying of steel was used for the reactor container, which by the agency of neutrons quickly wears-out. Due to this, unpleasant surprises may appear in ten years. - Electricity produced in the Nuclear Power Plant Temelín is financed by tax-payers - Export of brown coal from Bohemia to the power station Arzberg after closing of mines in Wackersdorf; this coal is now missing in Czech power stations, and as a result of that the Nuclear Power Plant Temelín had to come. 	<ul style="list-style-type: none"> - Defects on steam lines does not put control items into any risk. The concurrency of two piping on the level +28,0 meters has been solved according to American standards. - This claim is untrue and merely propagandistic. - The pressure tank for the Nuclear Power Plant Temelín has been produced in the Škoda Plzeň factory and is of a high standard. To observe its aging, the power station has a very sophisticated program at hand, so called a program of evidence samples, which had been favorably assessed by western experts. - Electricity produced in the Nuclear Power Plant Temelín is by no means subsidized by the state budget of the Czech Republic. - The Czech Republic has enough coal for its thermal power stations.

<p>40. Matthias Beck Klösterleinsweg 53 95028 Hof</p>	<p>- Nuclear energy is not reliable source and 15 post- Černobyl years must not be forgotten.</p> <p>- Appeal to responsible politicians not to put the Nuclear Power Plant Temelín into the operation.</p>	<p>- Temelín is by no means Černobyl. The accident of Černobyl's type is not possible at the Nuclear Power Plant Temelín. The range of heavy accidents is considerably lower. The Czech Republic has signed the Convention on the compensation of the damages caused by a nuclear accident.</p> <p>- The government of the Czech Republic decided on the completion of the Nuclear Power Plant Temelín in 1999. Approval process is under control of the independent national body of inspection – The State Office for Nuclear Safety.</p>
<p>41. Stadt Regensburg Environmental department</p>	<p>- To put the Nuclear Power Plant Temelín into operation only after it meets EU safety standards.</p> <p>- These standards has to be mandatory for the Czech Republic in its negotiation on the accession.</p>	<p>No EU safety standards exist. The Nuclear Power Plant Temelín complies with the standards set and conforming to international recommendations.</p>
<p>42. Kersti Mund Schiesstattweg 2 94032 Pasov Germany</p>	<p>- Devastating results of an eventual accident of the Nuclear Power Plant Temelín in the densely populated area</p> <p>- The risk of accidents, considering more frequent occurrence of defects, is higher than elsewhere.</p>	<p>- Endangering of inhabitants in case of a heavy accident of the Nuclear Power Plant Temelín would happen into the distance of the outer zone of the Accident planning, that is, within 13 kilometers. The exact distance would depend on the specific meteorological situation and the results of monitoring. In the countries bordering with the Czech Republic would arise, in case of this accident, the necessity of monitoring, and, in case of an extreme situation, the necessity of reducing consumption and distribution of food.</p> <p>- The risk of an accident of VVER reactors is similar to other Nuclear Power Plants with a PWR type of reactors. The Nuclear Power Plant Temelín with the applied measures for the enhancement of the safety is comparable to other Nuclear Power Plants in Europe. Studies of risks, which a man is commonly exposed to, have proved that a risk of an accident of a Nuclear Power Plant is by several degrees lower than other risks.</p>

<p>43. Non-party platform against atom danger D-94136 Kellberg</p>	<ul style="list-style-type: none"> - Alternative conceptions, including a zero alternative, are missing. - No energetic need for a power station exists. - Proceeding methods for cases of heavy accidents are missing, which contravenes EU regulations. - Against the rules of the EU, the documentation for the public was not submitted in German language, which did not enable to German public to acquaint itself with it in the given trial period. - They will not partake in this refusal to take a personal responsibility, they are asking for conducting of trustworthy tests on the tolerance towards the environment in accordance with the agreement of 1996. - Shutting down of the operation of the Nuclear 	<ul style="list-style-type: none"> - The Nuclear Power Plant Temelín is practically completed. Reinforcing of the zero alternative is not feasible in this situation. - The energy needs were evaluated in the approved Energy Policy of the Czech republic in the year 2000, and are exclusively a matter of an independent state. - Endangering of inhabitants in case of a heavy accident of the Nuclear Power Plant Temelín would happen into the distance of the outer zone of the Accident planning, that is, within 13 kilometers. The exact distance would depend on the specific meteorological situation and the results of monitoring. In the countries bordering with the Czech Republic would arise, in case of this accident, the necessity of monitoring, and, in case of an extreme situation, the necessity of reducing consumption and distribution of food. European standards for the nuclear safety do not exist. Regulations on the nuclear safety and radiation protection in effect in the Czech Republic are based on the international recommendations (MAAE, ICRP), and are fully comparable with the ones in other countries running Nuclear Power Plants. - Not the truth; it was decided in the meeting of the international Commission that a German translation of the report will be provided for by the Austrian party. The documentation had been at disposal in the Internet in Czech and English versions from April 20, 2001. - We do not know the term "tolerance", the EIA report was processed in accordance with the Melk protocol which had been jointly signed by the prime ministers Schüssel, Zeman and EU commissar Verheugen, pursuant to the EU Guidelines of 1997. - Processing of EIA does not depend on the operation of the power station. On principle, it is being conducted before the initiation of the construction when no operation exists. The operation has not been initiated so far, the case is a testing of commencement, which must precede launching of the operation. - Not the truth; each country has the right to decide on its own energetic policy. The other countries in the EU also run Nuclear Power Plants.
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	<p>Power Plant Temelín until completing of these tests.</p> <p>- By operating of the Nuclear Power Plant Temelín, the Czech Republic breaks EU law!</p>	<p>countries in the EU also run Nuclear Power Plants.</p>
<p>44. Helga Schilling, Germany</p>	<p>- She is concerned about protection of people in Bohemia and Moravia.</p> <p>- She shares the worries of the president Havel about people in his country.</p> <p>- A danger for neighboring Bavaria and Austria needs to be eliminated.</p>	<p>- In the Czech Republic, almost 70 % of the citizens are all for the commencement of the Nuclear Power Plant Temelín; people are not afraid of the electricity.</p> <p>- Worries of the president Havel are his private opinion.</p> <p>- Endangering of inhabitants in case of a heavy accident of the Nuclear Power Plant Temelín would happen into the distance of the outer zone of the Accident Planning, that is, within 13 kilometers. The exact distance would depend on the specific meteorological situation and the results of monitoring. In the countries bordering with the Czech Republic would arise, in case of this accident, the necessity of monitoring, and, in case of an extreme situation, the necessity of reducing consumption and distribution of food.</p>
<p>45. Werner Kellner Edelbeckstrasse 7 84337 Schönau</p>	<p>- The Nuclear Power Plant Temelín is a nightmare for all neighboring countries.</p>	<p>- The risk of an accident of VVER reactors is similar to other Nuclear Power Plants with a PWR type of reactors. The Nuclear Power Plant Temelín with the applied measures for the enhancement of the safety is comparable to other Nuclear Power Plants in Europe. Endangering of inhabitants in case of a heavy accident of the Nuclear Power Plant Temelín would happen into the distance of the outer zone of the Accident Planning, that is within 13 kilometers. The exact distance would depend on the specific meteorological situation and the results of monitoring. In the countries bordering with the Czech Republic would arise, in case of this accident, the necessity of monitoring, and, in case of an extreme situation,</p>

	<ul style="list-style-type: none"> - Černobyl must not repeat itself. - The accession of the Czech Republic into EU must not be connected with endangering of its own citizens. - Preserve peace and take fears of thousands of citizens seriously. 	<p>accident, the necessity of monitoring, and, in case of an extreme situation, the necessity of reducing consumption and distribution of food.</p> <p>The study or risks which a man is commonly being exposed to has proved that the risk of an accident of a Nuclear Power Plant is by several degrees lower than other risks.</p> <ul style="list-style-type: none"> - Temelín is by no means Černobyl. The accident of Černobyl's type is not possible at the Nuclear Power Plant Temelín. The range of heavy accidents is considerably lower. The Czech Republic has signed the Convention on the compensation of damages caused by a nuclear accident. - Studies of risks, which a man is commonly exposed to, have proved that a risk of an accident of a Nuclear Power Plant is by several degrees lower than other risks. Other EU countries also run Nuclear Power Plants. There is definitely no interest in the Czech Republic in endangering of its own or foreign citizens. - We take the concerns into consideration
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<p>46. Landratsamt Regen 94202 Regen</p>	<ul style="list-style-type: none"> - Rising objections against the Nuclear Power Plant Temelín within the tests on the tolerance towards the environment, in the meeting of the Counsel on May 7, 2001: the reason is a frequent occurrence of particularly serious defects increasing disturbance of the inhabitants. - Immediate release of radioactive particles as the region is situated in the scope of activity of the Nuclear Power Plant Temelín. - Provided the Nuclear Power Plant Temelín does not comply with western-European standards, we are asking for its shutting down. 	<ul style="list-style-type: none"> - The period of a commencement serves to the verification of the operation of equipment and uncovering of defects before starting commercial operation itself. During the commencement of western Nuclear Power Plants defects occurred, too. The amount of defects occurred by now during the commencement period of the Nuclear Power Plant Temelín is low, and their safety relevance is small. We do not know the term "tolerance" towards the environment. - Endangering of inhabitants in case of a heavy accident of the Nuclear Power Plant Temelín would happen into the distance of the outer zone of the Accident Planning, that is, within 13 kilometers. The exact distance would depend on the specific meteorological situation and the results of monitoring. In the countries bordering with the Czech Republic would arise, in case of this accident, the necessity of monitoring, and, in case of an extreme situation, the necessity of reducing consumption and distribution of food. - European standards for the nuclear safety do not exist. Regulations on the nuclear safety and radiation protection being in effect in the Czech Republic are consequent upon the international recommendations (MAAE, ICRP) and are fully comparable with the ones in other countries running Nuclear Power Plants too.
<p>47. Bayerischer Landtag Poslanec Wolfgang Gartzke</p>	<ul style="list-style-type: none"> - The reactor is problematic as it is composed of two components of a different construction. - This opinion is also shared by international experts. - Tests on the tolerance towards the environment are necessary and thinking of alternative variants, which would mean a smaller burden for the environment, are necessary too. 	<ul style="list-style-type: none"> - Using the components from different producers is common in the nuclear energy industry, and certainly does not mean deterioration of safety - the opposite is the case. - All the international missions (about 10) provided favorable statements on the safety of Temelín. - The EIA report has been processed within the Melk protocol. The Czech republic, on the contrary to Austria, does not have at its disposal large watercourses. Solar and wind energy is in a large extend connected with individual regions. - Environmental impacts of the Nuclear Power Plant Temelín are very small, as the submitted EIA report proves.

	<ul style="list-style-type: none"> - These alternatives exist but have not been submitted. - Harder attention towards using of wind energy, construction of hydroelectric power stations and using biogas in the Czech Republic rank among them. - The question of warranties, which should be in a level of 5 milliards EURO, is not solved. 	<ul style="list-style-type: none"> - Possibility of using of wind energy in the Czech Republic is very limited, and has only restricted regional character. It cannot substitute the necessary capacity, and at the same time it is three times more expensive than the electricity from a Nuclear Power Plant. - The Czech Republic has signed the Convention on the compensation of damages caused by a nuclear accident, which the energetic company ČEZ and the Czech Republic are responsible for.
<p>48. Ellen Vogt 90482 Norimberk Kinkelstrasse 15</p>	<ul style="list-style-type: none"> - By changes in the premises, some changes in other parts of the Nuclear Power Plant Temelín occurred too. Tests on the tolerance towards the environment should therefore relate also to these parts. - Submitted documentation entirely omits or takes insufficiently into account negative impacts of radioactive radiation. - The documentation does not discuss altered conception of manipulation with radioactive material and its transportation to Dukovany. - Request for evaluation of all project changes with the attendance of the international public before the activation of the reactor. - The governments of the Federal Republic of Germany have to assert the fulfillment of all the requests on a bilateral level. 	<ul style="list-style-type: none"> - The environmental impacts assessment of the project changes of the Nuclear Power Plant Temelín was submitted according to the Czech Act No. 244/1992, and a favorable assessment by the Ministry of Environment was issued. - Documentation takes an impact of ionizing radiation sufficiently into account in accordance with current scientific knowledge and practice. - Transportation of radioactive waste to its deposit in Dukovany is taken into account in the documentation. - Safety evaluations of the changes have been completed in accordance with the Czech laws of the State Office for Nuclear Safety, which issued its consent with the commencement. - Within bilateral agreements between the Czech Republic and the Federal Republic of Germany, the safety of the Nuclear Power Plant Temelín was being assessed for several years. Selected safety problems have been

	<p>On behalf of children, nature, and the future:</p> <ul style="list-style-type: none"> - To use only renewable resources, and thus to prevent development of leukemia and breast cancer. - To get rid of the neighbors who tolerate this evil. - 34 % share on energy production will cause damages for millions of years. - Take atom away! 	<p>evaluated by GRS.</p> <ul style="list-style-type: none"> - Renewable resources are not sufficient for covering of energetic needs of the Federal Republic of Germany, nor the Czech Republic. Leukemia and breast cancer are due to natural occurrences. - No comments - Many developed countries in Europe and all over the world have bigger share of nuclear energy in electricity production. Nuclear energy use is one of the possibilities for fulfilment of the Kjót Protocol obligations, which is oriented to the environmental protection. - Each country has a right for free decision whether to use the nuclear power or not.
<p>49. Protests of six German citizens with their signatures and addresses</p>	<ul style="list-style-type: none"> - Nearness of the Nuclear Power Plant Temelín to the borders with the Federal Republic of Germany. - The Nuclear Power Plant Temelín is considerably behind the EU standards. - Constantly recurring defects have revealed its insufficiency of operation. 	<ul style="list-style-type: none"> - The Nuclear Power Plant Temelín is sufficiently distant from the borders with the Federal Republic of Germany. There are power stations positioned directly on the borders of the both countries. - EU standards do not exist. - The period of a commencement serves to the verification of the operation of equipment and uncovering of defects before starting commercial operation itself. During the commencement of western Nuclear Power Plants defects occurred, too. The amount of defects occurred by now during the commencement period of the Nuclear Power Plant Temelín is low, and their safety relevance is small.

	<ul style="list-style-type: none"> - The Czech Republic does not need electricity from the Nuclear Power Plant Temelín, the most of it will be exported. - Emission of radioactive particles from Nuclear Power Plants in the Federal Republic of Germany causes cancer of children; consequently the claim that the Nuclear Power Plant Temelín is a source of energy not emitting radiation is not true. - Dosages of radiation on inhabitants are being processed carelessly. - The zones of emergency set to 5 and 13 km are small. An example of Černobyl is given, noted that its scope is up to 100 km - Insufficient processing of the burned fuel issue in the submitted documentation. 	<ul style="list-style-type: none"> - Pursuant to conducted forecasting and calculations, the electricity from Temelín will be necessary within five years for the full self-sufficiency of the Czech Republic. - Breast cancer of children in the Federal republic of Germany is due to natural occurrence of this disease. Contribution of radioactive emissions towards this occurrence is insignificant. - The evaluation of dosages caused by the operation of the Nuclear Power Plant Temelín is processed entirely in accordance with international standards. - Endangering of inhabitants in case of a heavy accident of the Nuclear Power Plant Temelín would happen into the distance of the outer zone of the Accident Planning, that is, within 13 kilometers. The exact distance would depend on the specific meteorological situation and the results of monitoring. In the countries bordering with the Czech Republic would arise, in case of this accident, the necessity of monitoring, and, in case of an extreme situation, the necessity of reducing consumption and distribution of food. The accident of Černobyl's type is not possible at the Nuclear Power Plant Temelín. The range of heavy accidents is considerably lower. The Czech Republic has signed the Convention on the compensation of the damages caused by a nuclear accident. - Storing of the burned fuels of the Nuclear Power Plant Temelín will be secured in the same way as at other Nuclear Power Plants of this type: at
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<p>Number of signatures: 6</p>	<ul style="list-style-type: none"> - Appeal to shut down the Nuclear Power Plant Temelín until all safety issues are resolved. - Implementing of the approval proceedings concerning the safety of the reactor. 	<p>the beginning in the Nuclear Power Plant (for twelve years), afterwards in an intermediate storage, and finally in a permanent waste disposal site, which is being prepared in the meantime.</p> <ul style="list-style-type: none"> - Safety issues have been assessed, besides others, also by GRS, and their solution has been accepted. - The approval proceedings are, pursuant to the laws of the Czech Republic, in a sole competency of the national inspection body – the State Office of Nuclear Safety. Based on the submitted documentation and in accordance with the Czech nuclear law, the agreements for individual phases of commencement are being issued.
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<p>50. Standard cyclostyled letter type B</p> <p>Number of signatures: 284</p>	<ul style="list-style-type: none"> - Protest against passing on the documentation with the embellished name "Environmental Impact Assessment of the Nuclear Power Plant Temelín" - Constant concealing of important facts proves that the safety of the reactor is low and its "normal" emissions are considerably higher than those of a western type of reactors. - Request for the immediate stopping of further works in the building site of the Nuclear Power Plant Temelín, and returning of the Ministry of Industry and Commerce to a reasonable energetic policy. - Location of the reactor in the immediate distance of a transit gas line. - Emissions of the reactor in the Nuclear Power Plant Temelín exceed the emission values in modern Nuclear Power Plants from 100 to 1,000 times. 	<ul style="list-style-type: none"> - <i>can't be commented</i>, we are not convinced whether the citizens had at least the possibility to read the Assessment of the Commission. - Except for the documentation, which has been concealed because of commercial interests of contractors, all the documentation on the Nuclear Power Plant Temelín is available at the Information Center of the Nuclear Power Plant Temelín. Normal emissions are fully comparable with emissions of western Nuclear Power Plants of a similar type and capacity. - The Nuclear Power Plant Temelín is being built in compliance with the resolution of the Government of the Czech Republic No. 472 of 1999, and approved Energetic policy (resolution of the Government No. 50 of 2000). There is no reason for stopping the works. - It has been proved that the transit gas conduct in the proximity of the Nuclear Power Plant Temelín (approximately 900 meters) does not represent a danger to its safety. These analyses were submitted to both Austrian and German parties. - Emission values of the Nuclear Power Plant Temelín are comparable to similar power stations, such as the Nuclear Power Plant Isaar in Germany.
<p>51. Standard cyclostyled letter type A</p>	<ul style="list-style-type: none"> - Electricity from the Nuclear Power Plant Temelín is principally destined for export, and is subsidized by Czech tax-payers - The claim that the Nuclear Power Plant Temelín does not emit a considerable amount of 	<ul style="list-style-type: none"> - The electricity produced in the Nuclear Power Plant Temelín is certainly not subsidized by the Czech State budget. - Emitted amounts of radioactive substances during the normal course of the operation of the Nuclear Power Plant Temelín are comparable. Emission values of the Nuclear Power Plant Temelín are comparable with similar power stations, such as the Nuclear Power

<p>Number of signatures: 480</p>	<p>emissions is not factual. Even if this were not true, children in the areas surrounding power stations are endangered by cancer, so that talking about the insignificant amount of radioactive emissions is cynical.</p> <ul style="list-style-type: none"> - The claim that the Nuclear Power Plant Temelín does not produce any greenhouse gases is false. In addition, it produces the gas Krypton 85, which is very harmful. - Setting limit values of radiation on inhabitants near the Nuclear Power Plant Temelín to 40 Sv does not agree with reality. - Insufficient and misleading data about the evacuation in case of an accident. 	<p>Plant Temelín are comparable with similar power stations, such as the Nuclear Power Plant Isaar in Germany. Cancer of children in the Federal Republic of Germany is due to the natural occurrence of this disease. Contribution of radioactive emissions towards this occurrence is insignificant.</p> <ul style="list-style-type: none"> - The Nuclear Power Plant Temelín, as well as other Nuclear Power Plants, does not produce greenhouse gases – CO₂ – during its operation as no combustion processes occur in it. Harmfulness of Kr 85 is not scientifically known. - During a computer transfer of texts, a mistake emerged and a sign "micro", that is one millionth, was not transferred. The correct value has been fixed into the text, equaling to 40 microSv, which fully conforms to the requirements of radiation protection. - The operator submitted Emergency Plans to the state inspection. Emergency Plans are being regularly checked up and put into practice, and their practical feasibility has been verified in this way. Many bodies of the state administration and regional government take part in their preparation and realization.
<p>Number of signatures: 1427</p>	<p>Signatures of pupils manifesting their worries about the Nuclear Power Plant Temelín operated without the best safety measures.</p>	<ul style="list-style-type: none"> - The apprehensions of pupils have been noted, they are not justified.
<p>Number of signatures: 1427</p>	<ul style="list-style-type: none"> - Worries of inhabitants and surrounding areas of the town about the operation of the Nuclear Power Plant Temelín. - Constant defects of various kinds show clearly that this mix of a Soviet reactor and an American control cannot be managed. 	<p>Apprehensions of the public have been noted, they are not justified.</p> <ul style="list-style-type: none"> - The period of a commencement serves to the verification of the operation of equipment and uncovering of defects before starting commercial

	<p>- The Nuclear Power Plant Temelín does not comply with western safety standards. Its operating in Germany would not be permitted. Further improvements are questionable, and therefore the only logical step is stopping the construction.</p>	<p>operation itself. During the commencement of western Nuclear Power Plants defects occurred, too. The amount of defects emerged during the commencement of the Nuclear Power Plant Temelín up to now is low, and their safety relevance is small. The amount of defects since the beginning of activation is not, comparing to other units, very high. It is not a trial operation but only trials and tests on putting into operation.</p> <p>- The risk of an accident of VVER reactors is similar to other Nuclear Power Plants with a PWR type of reactors. The Nuclear Power Plant Temelín with the applied measures for the enhancement of the safety is comparable to other Nuclear Power Plants in Europe. No European standards on nuclear safety exist. Regulations on nuclear safety and radiation protection in effect in the Czech Republic are based on the international recommendations (MAAE, ICRP) and are fully comparable with other countries operating Nuclear Power Plants. Responsibility of the Czech Republic and the operator has been proved by the fact that the range of changes, striving for increasing of safety, has been accepted, having caused the raising of prices and delay in putting of the power station into the operation.</p>
<p>54. Huttenlober Gaby 940 36 Passau Siebei Sylvia 94118 Jandelsbrunn</p>	<p>- After looking at the documentation on the Nuclear Power Plant Temelín in the Office of a federal state in Pasov, the ladies state that in spite of all the care and good technical work of Czech specialists, the Nuclear Power Plant Temelín is, because of its defects, dangerous.</p> <p>- Nobody is willing to assume warranties for the Nuclear Power Plant Temelín.</p>	<p>- The period of a commencement serves to the verification of the operation of equipment and uncovering of defects before starting commercial operation itself. During the commencement of western Nuclear Power Plants defects occurred, too. The amount of defects since the beginning of the commencement is not, comparing to other units, high. It is not a trial operation but only trials and tests on putting into operation.</p> <p>- The risk of an accident of VVER reactors is similar to other Nuclear Power Plants with a PWR type of reactors. The Nuclear Power Plant Temelín with the applied measures for the enhancement of the safety is comparable to other Nuclear Power Plants in Europe. The accident of Černobyl's type is not possible at the Nuclear Power Plant Temelín. The range of heavy accidents is considerably lower. The Czech Republic has signed the Convention on the compensation of damages caused by a nuclear accident.</p>

<p>Počet podpisů: 13</p>	<ul style="list-style-type: none"> - Concern for the transportation of fuels and uncertainty concerning storing of burned cells. 	<ul style="list-style-type: none"> - The safety of the preparation of fuel is sufficiently provided for, and is also subjected to the inspection of an independent body.
<p>55. Standard letter type L (Bez uvedení adresy)</p>	<ul style="list-style-type: none"> - The Nuclear Power Plant Temelín does not even begin to comply with EU safety standards. - Danger of an accident is higher than in other western Nuclear Power Plants. - Considering frequent occurrences of defects, the Nuclear Power Plant Temelín can not be put into operation. - Electricity from the Nuclear Power Plant Temelín is destined mainly for export and the Czech Republic does not need it. - Occurrence of cancer at children also in the neighborhoods of Nuclear Power Plants in the Federal Republic of Germany. - Dosages of radiation on inhabitations are carelessly processed, and are unacceptable for us. - The scope of the impact of catastrophes being 5 and 13 kilometers is small, as the case of Černobyl has proved. Evacuation of inhabitation could not be accomplished so quickly. 	<ul style="list-style-type: none"> - EU standards on nuclear safety do not exist. - Probability of an accident in the Nuclear Power Plant Temelín is comparable with western power stations. This has been confirmed by processed studies, which are further being worked out. - Number of defects during the commencement of the Nuclear Power Plant Temelín has been small so far, and for the most part has not influenced the nuclear safety. - In five years, the power station shall fully provide for the energy self-sufficiency of the Czech Republic. - The increase of occurrences of cancer in the neighborhood of Nuclear Power Plants has never been proved. - Limits of dosages are based on the recommendations MAAE and ICRP. - The scope of the zones of emergency planning has been set based on results of analyzes of heavy accidents and on probability studies assessment (PSA) of the Nuclear Power Plant Temelín. The scope of emergency planning zones cannot be compared with the scope of the accident in Černobyl. The time course of the accident differs, and possible

<p>Number of signatures: 58</p>	<ul style="list-style-type: none"> - Issues of storing of radioactive waste, as well as of cases of a plain crash, were not dealt with sufficiently. - Appeal to the government of the Czech Republic not to put the Nuclear Power Plant Temelín into the operation, and to accomplish approval proceedings in accordance with European standards. 	<p>release of radioactive particles would occur with delay, enabling timely fulfillment of emergency measures.</p> <ul style="list-style-type: none"> - The issue of storing of radioactive waste is dealt with sufficiently in comparison with other Nuclear Power Plants in the world. Probability of a plain crash is extremely low; beside that, a robust construction of the containment would resist a fall of a military plain. - Approval proceedings for the Nuclear Power Plant Temelín follow solely national standards.
<p>56. Umweltinstitut München e.V - Addition</p>	<p>Addition to the objections of April 19, 2001</p> <ul style="list-style-type: none"> - Objections against placing of the safety equipment for the steam supply, situated out of the containment on the base of a high of 28,8 meters, together with the supply of steam and feeding water. - Breaking pipes takes into account only ideal events, the construction is not robust enough. - Joining supporting boards with a wall loaded with pressure is not suitable. - There is no evidence that the safety valves will manage releases of steam. - A medium cooling circuit stage between the 	<ul style="list-style-type: none"> - Concurrency of the pipes with steam and water on the level +28,0 meters and the suggested and realized solutions of the Czech party have been consulted with a specialist organization GRS from Germany, and consequently also in a tri-parties discussion. Suggested solution, conforming to the standards in the U.S.A., has been accepted with the notion that the Czech party shall make further improvements in the future. Does not concern the work of the Commission, worries are not sound. - The qualification of the valves has been secured. Does not concern the work of the Commission. - The question is not clear from the technical point of view. Does not

<p>Number of signatures: 3</p>	<p>nuclear part and the subsidiary cooling system is lacking.</p> <ul style="list-style-type: none"> - WWER-1000, as it is well known, shows the increased sensitivity of welds near the area where the fission reaction in the reactor runs, against neutrons getting brittle (?) - Nearby the Nuclear Power Plant Temelín there are three long-distance gas lines situated which could cause consequent damages in case of an accident. - Therefore, we resolutely ask for not putting the Nuclear Power Plant Temelín into the operation (frequent malfunctions, untested prototype of a turbine, combination of Russian and U.S. technology). 	<p>concern the work of the Commission.</p> <ul style="list-style-type: none"> - Pressure containers of the reactor in the Nuclear Power Plant Temelín have been produced in the factory ŠKODA Plzeň, which has considerable experience with its production; their quality is high. A very sophisticated program of evidence samples, which had also been submitted to GRS and Austrian party within tri-parties discussion for their assessment, provides for the observing of possible degradation (getting brittle) of welds owing to radiation by neutrons. - Possibility of the impact on the security of the Nuclear Power Plant Temelín on account of the accident of the gas line has been analyzed in detail. It has been proved that the safety of the power station is not imperiled even when conservative assumptions accepted. - The amount of defects in the Nuclear Power Plant Temelín has been small so far. Problems can be expected during the commencement of a new untested type of a turbine. Similar situations also occurred in the past in some western countries where a commencement period had to be prolonged too. Combination of Russian and western technologies is being successfully pursued for over twenty years in the Nuclear Power Plant Loviisa in Finland. Combination of different technologies in the nuclear industry and other branches is a common practice. It is necessary to determine the quality of technologies from their real standard, not from which part of the world it is coming from.
<p>57. Fritz 1. Burgermeister der Kreisstadt Regen</p>	<p>- Inhabitants of the town are worried about a threat to health in case of heavy accidents.</p>	<p>- Impact of heavy accident would manifest itself in the zones of emergency planning, that is, within 5 or possibly 13 kilometers. Analyzes of these accidents show that in neighboring countries no measures of emergency planes will be necessary, only detailed monitoring of a radiation situation.</p>

	<ul style="list-style-type: none"> - Request for conforming to international standards. 	<ul style="list-style-type: none"> - The international and EU standards exist only for the area of radiation protection. These standards comply with the recommendation of the MAAE and ICRP. Czech standards also comply with these international recommendations.
<p>58. Peter Rauscher Am Eichelberg 2 94356 Kirchroth - Pillnach</p>	<ul style="list-style-type: none"> - Insufficient protection of the shell of the reactor against a plain fall. - Small distance between steam and water pipes being a risk of radiation. - A human factor can fail at the moment of emergency disconnection of the reactor. - The mix of western and eastern technologies has not been tested. 	<ul style="list-style-type: none"> - Probability of a plain crash is very low. Additional analyzes proved that the robust construction of the containment will resist a fall of a small military plain. - The concurrency of the steam and water piping in the height +28,8 meters has been solved according to a standard of the U.S.A. The problem has been consulted with the German organization GRS, and this solution has been accepted. - Beginning and proceeding of a quick disconnection of the reactor cannot be influenced by a human failure as it runs automatically. Possibility of the failing of a human factor has been reduced by a demanding preparation and regular testing of all the employees of the power station whose activity might influence the safety of its operation. - The mix of western and eastern technologies already exists at several power stations, such as in Loviisa in Finland, and Mochovce in Slovakia. The quality of technologies cannot be determined by which part of the world it is coming from but only from the quality of used technologies.
<p>Without the address (probably a booklet)</p>	<ul style="list-style-type: none"> - The Nuclear Power Plant Temelín does not even begin to meet the safety EU standards. - The risk of an accident is higher than at western Nuclear Power Plants. 	<ul style="list-style-type: none"> - No EU standards on nuclear safety exist. The power station complies with all national standards used in its project (former U.S.S.R., U.S.A., C.R.) - Considering the fact that the Nuclear Power Plant Temelín is of the same type as the majority of Nuclear Power Plant in the west – the PWR, the risk of an accident is comparable. This has been proved from the deterministic standpoint in safety reports, and from probability standpoint

	<ul style="list-style-type: none"> - Considering frequent occurrence of defects the Nuclear Power Plant Temelín cannot be put into the operation. - Electricity from the Nuclear Power Plant Temelín is destined mainly for export, and the Czech Republic does not need it. - Cases of cancer of children near Nuclear Power Plants in the Federal Republic of Germany. - Dosages of radiation on inhabitants are being processed carelessly and are unacceptable for us. - The scope of impact of catastrophes set to 5 and 13 km is small, which has been proved by the example of Černobyl. The evacuation of inhabitants can not be done sufficiently quickly. - Insufficient attention has been paid to the issue of storing of radioactive waste, as well as to possible crash of a plain. - Appeal to the Government of the Czech 	<p>in probability assessment studies of the Nuclear Power Plant Temelín.</p> <ul style="list-style-type: none"> - The amount of defects, which have occurred by now during the commencement period of the Nuclear Power Plant Temelín, is similar to those at other Nuclear Power Plants. - The electricity from the Nuclear Power Plant Temelín will partially be exported within five years. - There are no documented information on increased occurrence of cancer in the areas near Nuclear Power Plants in the Federal Republic of Germany and other countries. - Dosages of radiation on the inhabitation as the result of both normal operation and emergency situations are low and in accordance with international recommendations and practice. - The scope of the zones for emergency planning is really small, being set on the basis of the detailed analyzes of accidents, using the knowledge of contemporary science and technology. The scope of a potential emergency is considerably smaller than in Černobyl because the case is a different type of a Nuclear Power Plant. In contrast to Černobyl, possible accidents would proceed slowly and due to this the evacuation of inhabitation would be possible. - Chapter 2.6 of the Assessment, which complies with the directive of EU, deals with the storing of fuels. Probability of a plain crash is extremely low. Additional analyzes proved that a robust construction of the containment would resist a fall of a military plain. - Approval proceeding is conducted in accordance with standards and
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<p>Number of signatures: 8</p>	<p>Republic not to put the Nuclear Power Plant Temelín into operation and to implement approval proceedings in accordance with European standards.</p>	<p>laws of the Czech Republic, just like in all other countries.</p>
<p>Standard letter type J Bayrischer Bauernverband)</p>	<p>A complaint of the Bavarian Association of Farmers against the commencement of the Nuclear Power Plant Temelín:</p> <ul style="list-style-type: none"> - Thousands of people have been suffering consequences of Černobyl's catastrophe till today. - Similar to Černobyl, the Nuclear Power Plant Temelín has a pressure-delivery reactor of Russian construction installed, which, considering the insufficient safety standards, might threaten our homes. - Problems with a turbine show that the mix of Russian and western technologies causes significant problems. - The way of supplying of energy via the Nuclear Power Plant Temelín is wrong. 	<ul style="list-style-type: none"> - Apprehensions are not justified, and are burdened with the unfair-minded propaganda. - Temelín, by its construction, entirely differs from Černobyl. The accident of Černobyl's type is not possible at the Nuclear Power Plant Temelín. The range of heavy accidents is considerably lower. The Czech Republic has signed the Convention on the compensation of damages caused by a nuclear accident. - The risk of an accident of VVER reactors is similar to other Nuclear Power Plants with a PWR type of reactors. The Nuclear Power Plant Temelín with the applied measures for the enhancement of the safety is comparable to other Nuclear Power Plants in Europe. Approval processes, specified documentation, and technical requirements and their demands differ in various EU countries. A Nuclear Power Plant of the Russian project post-equipped with western equipment has been approved and running in Finland (Loviisa). Nuclear safety is a responsibility of individual countries. - At present, there are many methods of electric power production all over the world. Each of these methods has its strengths and weaknesses.

Number of signatures: 2		However, many developed Western countries operate nuclear power plants and it support the statement that this method is effective and only slightly affects the environment.
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Together 322 letters (2381 signatures) with suggestions were delivered to the Commission.

4. Comments and suggestions risen in the public hearing in České Budějovice on April 25, 2001

Written entry of an audio record of the public hearing

Please let me to say several words at the beginning, before I introduce other participants of today's whole public hearing to you. As you certainly know, negotiations between Prime Minister Miloš Zeman and Chancellor Schüssel were held in Melk last December where the two politicians agreed, under item V, to prepare a report that would deal with the influences on the living environment and to subject the report to a public hearing where the public would have the opportunity to make comments. Of course, the Melk Protocol specifies safety issues, issues of mutual informedness and establishment of a hotline. I emphasize that consideration of ecological impacts of the Temelín Nuclear Power Plant is one of the items of this Protocol. A time schedule has been prepared for the Protocol which specifies when an independent commission would be set up by the government, when the report of this independent commission would be processed, when this public hearing would be conducted and other collected comments. I would only like to stress that this is not a standard procedure of consideration of influences on the living environment under Act No. 244/92 Coll. and that this whole process is based exclusively on the agreement made in Melk on December 12 last year.

On the basis of the Melk Protocol, an independent commission of experts has been set up – its members in alphabetical order are: Mr. Jiří Hanzlíček, Mr. Milan Macháček, Mr. Miroslav Martiš and Prof. Josef Říha. This commission prepared the so-called "scoping list", which you received when you entered this room. At the same time, you also received rules for this meeting. Please put them on the screen. Some important steps stem from these rules:

Firstly – all queries shall be made using terminals located in the back. These queries should be sorted exactly according to the structure of the scoping list which you have at your disposal and which you can also find on the yellow sheets on the board in the back on my right side. These queries made through the terminal will appear on my screen and will be answered by members of the commission that I have introduced to you or by experts invited by them, sitting in first rows. They will introduced themselves in case of their possible presentations. Since we are aware that queries not in line with the structure of the scoping list can be discussed, we have also invited employees of the State Office for Nuclear Safety, who are not members of the commission and who have nothing in common with this Melk commission within the meaning of the Melk Protocol. They are here to answer your questions dealing with issues falling within the competency of the State Office for Nuclear Safety. Allow me to introduce them to you.

They are: Ms. Dana Drábová, Chairman of the State Office for Nuclear Safety, Mr. Petr Krs, Mr. Zdeněk Prouza and Ms. Alena Heribanová. They are ready to answer your questions regarding the Melk Agreement.

And now I will ask our computer desk whether there are already any queries there. Before we go through the questions, I would like to ask members of the independent commission to introduce the audience with their respective parts of the material prepared by them, in alphabetical order. Just for your information, you probably know it is also available on the web pages of the Ministry of Foreign Affairs where an invitation has been also published, together with the rules of this public hearing. So I would like to ask Mr. Hanzlíček to make a short presentation.

Good morning, ladies and gentlemen. In this very short introduction, I would like to inform you of the Atmosphere and Climate chapter. In case of detailed queries, which we expect, we have relevant experts here who would answer them.

Atmosphere. The key problem mentioned was release of radionuclides into the living environment in the form of environmental discharge. The Temelín Nuclear Power Plant has 3 declared gaseous environmental discharges – ventilation stacks. One for each unit and one at the Auxiliary Building. The stacks are 100 meters high, gaseous substances go through a complex treatment system before being discharged to the ventilation stack. They are filtered through a system of air filters which traps aerosols containing radionuclides, iodine and its compounds. The efficiency of these filters is higher than 99.5%. Discharges from the unit and auxiliary-building stacks are measured continuously. Continuous collection of aerosols is carried out using a large-scale AIM-type sampler. Continuous monitoring of aerosols and iodine is also secured by continuous signaling measurement. All monitors and sensors are verified for accuracy by the Czech Meteorological Institute. All measurement data are then collected in the Radiation Monitoring Control Room in the Auxiliary Building. The public is always regularly informed of the resulting values, and this will apply in the future, too. The State Office for Nuclear Safety has specified a limit which the Temelín Nuclear Power Plant shall not exceed – i.e. the value of effective dose for discharge into the environment – 40 μSv a year. I would like to mention here that this affects all living organisms and comes from the universe as well as from the inside of the Earth and from other materials surrounding us – the natural background dose for the Czech Republic is 1,800 μSv per year. The expert opinion focused on specific measurement although the Temelín Nuclear Power Plant is not in operation yet. However, this is the first actual measurement for after activation of the first unit in September 2000. Although the data are not representative, which we are fully aware of, the value of 0.001 μSv was detected in 2000, which constitutes 0.0025% of the limit and 0.000056% of the natural background – this value of the natural background is just a complementary piece of data. I would like to mention in this respect that the Austrian organization Global 2000 installed two devices near the Temelín Nuclear Power Plant for measurement of radioactivity and just like we, did not measure anything at all. At least there is something we have agreed on. In addition, the material contains real measured discharges from the Dukovany Nuclear Power Plant between 1995 and 2000 as compared to the specified limits. Subject to comparability of the physical principle and the output, it can be expected that gaseous discharges from the Temelín Nuclear Power Plant in case of full output will not be principally different from those in the Dukovany Nuclear Power Plant.

The scope of monitoring in Temelín is, as compared to similar nuclear facilities in Europe and America, highly above the standard. Just for the purposes of orientation: there is a nationwide radiation monitoring network on the whole territory of the Czech Republic. It is focused on monitoring the current radiation situation and timely measures in case of a potential radiation accident. Three basic recommendations have been prepared for this key issue. I will not mention them here – I will do so next time. As far as climate is concerned, the key problem involved potential influence of operation of cooling towers on climatic factors on the territory on the basis of presentation of results of mathematical and physical models CT-PLUME, dealing with the influence of the cooling-tower trail on thermal conditions in the lower part of the limiting layer of air. We can conclude that the average change in the average annual air temperature within the distance of 5 km from the Temelín Nuclear Power Plant ranges between 0.02 and 0.06°C based on the model calculation, and at the distance of 5 km it is 0.02 to 0.04°C. The influence of the cooling-tower trail on the humidity conditions in the lower part of the limiting layer of air within the distance of 5 km from the Temelín Nuclear Power Plant ranges between 0.000001 (one-millionth) and 0.000006 (six-millionths) of kg per cubic meter. The estimated influence of the Temelín Nuclear Power Plant on the regional scale at distances larger than 30 km is basically negligible from the point of view of annual average

values and their fluctuations. Several recommendations have been prepared in this case, too, which I will mention later. Thank you.

Before I give the floor to another member of the commission, allow me to officially welcome, with a bit of a delay, Mr. Libor Rouček, Spokesman of the Office of the Government, and Mr. Henning Ehrenstein, who attends this hearing on behalf of the European Commission. At the same time, I would like to welcome the Director of the Temelín Nuclear Power Plant. And one more formal comment – the official language of this meeting is Czech because the second public hearing should be held in Linz on the 9th day of next month. Of course we have information on possible non-performance of that meeting but it is an unofficial piece of information and we do not know how the Austrian side will respond. But now I would like to ask Mr. Macháček to make his presentation.

Ladies and gentlemen. Allow me to welcome you at today's public hearing whose real goal is that we, compilers of the material, can receive relevant comments from so we could solve them. My field of activity is biology, so I coordinated issues dealing with the influence on the environment, landscape, ecosystems and such issues, but since we were addressed in alphabetical order, I would like to make a brief introductory note on our methodology. First of all, when we analysed main inputs on the premises of the Temelín Nuclear Power Plant, and especially main inputs that will have to be evaluated with respect to their impacts, there is the issue of nuclear fuel and offtake of technological water as main inputs. Other inputs are later commented on in detail. When I simplify it, main outputs of the nuclear power plant into the environment are discharges into the atmosphere and climate, issues of change in mesoclimatic or microclimatic situation. Issues of potential interference with cultural heritage in the form of immovable cultural memorials, issues of influence on humans and living biosystems can be derived from such changes. Another principal output is the issue of all kinds of wastewater and stormwater and the way these aspects come out – in ecosystems of water reservoirs and in overall changes in the surroundings of the nuclear power plant. Another type of output that we have also paid attention to is the issue of solid waste – radioactive and other. That is for the introduction, of course I suppose these issues will be discussed in greater detail during the discussion.

And now briefly on what I actually coordinated. The issue of influence of this facility on the environment, landscape, ecosystems – I think we have to look at it at two levels. The first one is that in 1980s there was a change in an area of about 436 ha, of which about 25 ha is occupied by the so-called site equipment. This area was directly modified by the construction and an overwhelming majority of direct influences on the environment within the context of impact on the landscape was during that time. Secondly, influences of operation on the environment and landscape have been monitored and evaluated using climatic aspects, through interference with water. It is possible to conclude that the presumed influences, as we monitor all these impacts on the living environment, are really little significant or insignificant as compared to the influence on the landscape because since this area now hosts this big site whose scale is absolutely exceptional within the context of urbanization of Southern Bohemia, we have to evaluate the impact on the scenery and landscape clearly as very unfavorable, without any possibility of compensation. The other dominant part of influence on the landscape is impact on cultural heritage, especially because about 5 municipalities have disappeared in this area, with the exception of few objects, which strongly affected the territorial historical structure. And this impact on the landscape logically mirrors among other things in some aspects of a rather human nature, i.e. issues of comfort etc.

We also faced two more problems. First we had to try to evaluate, at least retroactively, what construction of the object actually means. And we have concluded that the indirect influences of this construction have mirrored in water under Nové Hradý most of all because a part of bottom lands in Stropnice between Nové Hradý and Byňov has been denaturalised in the form of the so-called substitute recultivation.

If I sum it up in this introductory presentation - and I am ready to answer your questions – I would conclude that great attention has been paid to revitalizing and recultivating measures in the area that has been directly affected by the construction, i.e. a project of land recultivation after equipping the site is already prepared. This recultivation was not evaluated at all in the original documentation. In addition to monitoring of radionuclides in some layers of the environment, fish etc., we have also proposed a new element in the form of monitoring of the influence of the Temelín Nuclear Power Plant from the sky using the LANDSAT satellite system because it is able to remonitor some changes back to 1984, i.e. approximately the time when the construction of the nuclear power plant started, and to evaluate, with a quite large degree of accuracy, issues of idyllic and thermal changes around Temelín. Interpretation of these data is absolutely objective. That is for my introductory presentation, thank you for your attention.

I would like to thank Mr. Macháček. I invite Mr. Martiš to make his brief presentation.

Good morning, ladies and gentlemen. My role in this small team was a bit different because the issue which we had to deal with is very broad professionally. It is not possible for the four of us to cover all the issues in question and it was my task to coordinate the large expert background for preparation of those special chapters that we ourselves are not able to prepare with sufficient expertise and for expert coverage of our starting expert documentation where we were not absolutely sure or where we considered it necessary to complement some points of question. So I was responsible for coordination of the expert background. Chapters prepared to order, so to say, include for example Influence on Health – the main author of the radiation part of this chapter is Prof. Vladislav Klener. I have to excuse him from this meeting because he attends a meeting in Vienna. I will ask Ms. Heribanová to answer your questions involving this issue. There will definitely be questions dealing with influences on the health of people. Documentation on the issue of non-radiation hygiene has been prepared by the National Health Institute. Mr. Kříž was in charge of the preparation team. As for the issue of influence on comfort and psychological aspects of the whole construction, we have received a statement by Mr. Rynda from the Faculty of Social Sciences of Charles University in Prague. So he is our third co-author of this chapter. Chapter Waste was prepared by a team headed by Mr. Slovák from the Nuclear Research Institute. Chapter Accidents has been prepared by Mr. Kříž from the same institution, using large expert background. I am responsible for one more unrewarding task: preparation of a non-technical summary, which is the brochure that you could pick up at the entrance to the room. In this brochure, it was necessary to present the issues as we understand it and to try to pass our understanding of the whole issue and our reservations into a human, non-technical language so we could communicate with people who have never encountered these issues. I admit for many years I have been one of those who said "no", "I don't know Temelín, I don't want it". But as things sometimes happen, one gets a full portion of what he denies, so now I know Temelín a bit. I have had the opportunity to see it from the inside and the outside and, thanks to very rich communication with our expert background, I think that I have gained an insight into the issue and can be a partner for all our colleagues and opponents who will critically review the report. I am responsible for the

contents of my non-technical summary. As for two technical mistakes, Prof. Říha will explain them better using overhead projection.

And finally, I am responsible for the unrewarding chapter dealing with variants. The issues of variants are one of the most sensitive and most needed, desirable in the whole procedure of consideration of influence on the living environment. If you do not have the possibility to compare diverse variants of solution, our opinion can have no effect. We have tackled two levels here. Conceptual, political, and design-based. Of course, our work involved one specific facility, specific technology, i.e. the design-based level. In addition, this is a facility or technology that is already built and is being verified. But we could not omit the concepts or policies governing the decisions up to the final decision of launching of the nuclear power plant into trial operation. And since many of us have participated in consideration of the first power policy in the Czech Republic between 1996 and 1998, consideration performed by the company Seven, and we have had the opportunity to look into the second review of the power policy performed by the company Malch... in 1999, we also evaluated those materials in the introduction of this opinion. Passages from the power policy and its consideration from 1998 are quoted there, the possibility of development of the power industry based mostly on coal, with breaks of land lines for mining, is considered there, just like a variant of power policy based especially on coal...

...I'm sorry, Mr. Martiš, I have to interrupt you. This is just an introductory presentation, brief introduction, so I would like to ask all of you to respect the fact that this presentation has to be brief and the goal of this public hearing is to collect comments and queries.

Thank you. Last minutes. A variant with coal mining and with Temelín is also discussed here, just like a variant without Temelín. Another policy discussed there is the one accepted by the government this January which went through public procedure and resulted in today's reality. We also consider the zero variant through all those 250 pages of the report – i.e. the variant that the nuclear power plant is already built but does not operate – and an active variant, i.e. what would happen if the Temelín power plant was launched into commercial operation. That is the fundamental comparison that I thought important to emphasize at the beginning and to which we will certainly return in the discussion. Thank you.

I would like to thank Mr. Martiš and ask Professor Říha for his brief presentation.

Good morning, ladies and gentlemen. Allow me, as a lecturer, to accompany my introductory word with pictures and prepared texts. My task is to mention three fields that we have considered, or actually two fields and the final consideration within the framework of common comparison of all those reviewed seven fields. As for field 2 – Hydrology, hydrosphere, influence on surface and underground water, I can say that it is the most extensive chapter in this report of ours. It is actually logical, resulting from the multiple-criterion and multiple-function properties of water in the environment and function of water as a cooling medium in the power plant. So when I am very brief, chapter two is divided into the basic issue of use of natural resources, i.e. demands on sources of water, to description of the affected environment in terms of hydrosphere, to potential impacts on the environment and monitoring of discharges. I would like to mention that technological water is drawn from Hněvkovice water reservoir that was built for that purpose in advance, and stormwater is discharged into the backwater of this reservoir through the Výšov reservoirs. All wastewater is discharged into the submerged part of the Kořensko water reservoir which is at the end of the backwater of the Orlík reservoir. What are the conclusions made by us?

First of all, we have concluded that there is no criterion that would define the limit of seriousness of the power plant's impact on the hydrosphere. It is a multiple-factor problem which is solved separately, on the basis of separate aspects, as it is common in some industrial plants. We have specified our priorities. They especially included: influence of radioactive radiation on humans and ecosystems through hydrosphere and liquid discharges, protection of surface underground sources, water losses and changes in the local hydroecological cycle and ecological circumstances of the liquid burden. At the same time, key problems were defined, just like in case of any other field. We defined three - safety and quality of drinking water, security and quality of technical water and risk of radioactive pollution of recipients as a consequence of discharge of tritium water. In addition to this standard solution that is contained in every study, we have also undertaken some other independent considerations, performed by our external colleagues. Influence of a possible climatic change after 2015, which is currently often discussed and where there are some fears that there would be a deficit in technological water in a longer time span, has been also considered. A comparative analysis with the Dukovany Nuclear Power Plant has been performed because it is absolutely comparable for the output of 2,000 MW. In addition, the conditions for the decision of the Office made in 1993 have been inspected, which involves the basic and key water-management procedure and decision. It has been reviewed on the basis of new regulations applicable since 1999. And, for the sake of completeness, since this is an international review, the issue of international obligations of the Czech Republic in the field of water management has been also considered.

It can be concluded that from the point of view of influence on the hydrosphere, the power plant does not exceed the rate specified in applicable legal regulations. Quantitative influences and qualitative changes of parameters of surface and underground water are not classified as significant. Based on the expert consensus, they can be evaluated as very low, deep within the range of fluctuations in nature. The overall influence of the power plant on hydrologic changes and surface and underground water can be evaluated as negligible and acceptable.

The third field I guaranteed was the influence of the power plant on land and mineral composition. In this case the structure is again identical with what you have in your overview. That covers issues of influence on land and property, description of the affected environment, including geology and morphology, potential effects on the environment in terms of use and, what is very important, seismology.

As far as overall evaluation is concerned, with respect to the influence on land and mineral composition and from the point of view of use of land and property we consider this issue irrelevant because the construction is completed. When we defined priorities, they included stability of geological subsoil and consideration of seismic resistance of all devices. We defined two key problems – general influence on land and minerals and seismic safety. Just like in case of that water, we again performed a kind of over-standard evaluation here, with a very detailed assessment of the risk of earthquake for the Temelín Nuclear Power Plant on the basis of compilation and evaluation of earthquake catalogs of source areas etc. I think it is necessary to emphasize that design-basis earthquake corresponding to the macroseismic intensity of 6 degrees of the international scale and peak acceleration of 0.05 g are correct values for the site. Thus, the values of the maximum calculated earthquake corresponding to the intensity of 6.5 degrees and acceleration of 0.1 g are not only correct, but even conservative. This all complies with international standards for the first category of seismic resistance. From this point of view, we have to conclude that the influence of the Temelín Nuclear Power Plant on land and minerals, including seismic safety, is indistinct and

acceptable. And lastly, I also have to mention something which is not in the brochure. This is called the Summary of a non-technical nature and involves the final comparison of considered fields of influence of the Temelín Nuclear Power Plant on the living environment. We have decided for this because the 7 chapters have been prepared by various teams of experts and it was necessary to transfer the generally defined risks of these 7 fields to a common denominator. So we made the consideration on the basis of two independent methods in a formalized manner. We used the method of the so-called verbal and numeric scale with weighed averages and the method theory of fuzzy sets, fuzzy logic and verbal sentences.

The first method allowed rating of all the seven examined fields and specification of resulting ratings. That is what you can find in all those final tables where individual fields are marked in a school-line manner – 1 is the best and 5 the worst. The other method actually monitored the correctness of the first method. As a conclusion, we can say that the results of both methods are cross-supportive. We have come to the final evaluation, as you may know from the press, that the potential influence of the power plant as a whole on the environment is rated as low, insignificant and acceptable. The school-like classification used in the first method corresponds to the weighed average of 2.506. It is my obligation to excuse one printing fault which occurred during graphical improvement of the non-technical summary on page 10. Please correct in the table, for the considered field of hydrology, line C – risk of radioactive pollution of recipients as a consequence of discharge of tritium water – the rating in the brochure is 2, but the correct value should be 3 as you can see on this picture and as is mentioned in the final report presented by the commission. And another numeric fault is in the considered field 07 – possibility of occurrence of accidents, where the correct value is 2.25, while you have 3.75 in the brochure. We are sorry, these faults are due to improvement of graphical representation, addition and removal of colours. It was omitted that number change, too. Thank you.

Thank you for the not-so-brief presentation. I would like to ask those who will make speeches on behalf of the commission and the State Office for Nuclear Safety as well as invited experts to make the presentations as brief as possible because the participants could think that we do not create sufficient room for their queries that start to come from the terminals. We will get to them soon. Before I give the floor to Ms. Drábová, you may have heard that the commission received an opinion of non-governmental organizations regarding the so-called process of review of the Temelín Nuclear Power Plant on the living environment under the Melk Agreement where some issues are criticized. Consideration of the main issue problem of a serious accident is missing. Employees of the State Office for Nuclear Safety are present here, they have a digitalized form of a report dealing with this and I suppose they will answer this question. The documentation avoids evaluation of the whole nuclear-fuel cycle. It was not subject of the report. There are no variants. Mr. Martiš has already mentioned these variants. There will be definitely time to discuss these variants. There is no time for really thorough evaluation. Ladies and gentlemen, I quoted the Melk Agreement at the beginning. It clearly specified the time schedule arising out of the Protocol. There is no clear legal framework. I emphasized at the beginning that the legal framework of Act 244/92 Coll. cannot be applied to this evaluation, to the report because the time schedule does not correspond with Act No. 244/92 Coll.. It does not even comply with the ESPOO Convention that has been already ratified but will come into effect on May 27. As a legal regulation in the Czech system of laws, this ratification does not mean retroactivity of the undersigned and ratified ESPOO Convention. However, now I would like to ask Ms. Drábová for a really brief presentation so we could get to the queries.

Good morning, ladies and gentlemen. My presentation will be really brief but first I would like to again mention the Melk Agreement, so often quoted. It specifies in clause IV that an evaluation of nuclear safety shall be performed. The State Office for Nuclear Safety was and is responsible for that clause. Clause V, which is the subject of this public hearing, involves evaluation of influence on the environment. Of course, there is an unclear boundary and area between these two clauses where there are points of interference that are very complicated to recognize by the public and can be easily abused by those who want to abuse them. Points of interference between nuclear safety and influence on the living environment. One of these areas is the area of evaluation of influence of serious accidents. Of course, the influence on the living environment has to incorporate risks of accidents and, as relevant directives of the European Commission mention, the report discussed here contains such evaluation and it has been already mentioned. It is true, though, that such evaluations usually incorporate only situations that are contemplated in safety documentation, i.e. design-basis situations. When we discussed the scoping list with our Austrian partners, namely scoping list for clause V, the issue of evaluation of accidents that are called above-design-basis, sometimes also serious although it is not same and we may return to this in answers to your questions, was raised several times and it was required that such accidents not contemplated in the design be included in the evaluation of influence on the living environment. It is not common, it is not even required under our legislation or the laws of the Community, it is not even a standardized procedure in individual EU countries. However, we have complied with this request made by our Austrian colleagues at least to the extent that the issue of serious accidents has been moved to a special forum. A one-day seminar with relevant documentation was held on that topic where all questions included in this area were discussed with Austrian experts. On the basis of this seminar, a summarized material has been compiled that is not an official part of the document which is currently being discussed with respect to clause V of the Melk Agreement, but it is available on the Internet pages of the Ministry of Foreign Affairs.

END OF SIDE 1, TAPE 1

... which was made at the time of preparation of the documentation. Within the framework of this document, the relevant legislation in the field of accident planning and accident response in the Czech Republic is discussed with special emphasis on cases of radiation and nuclear accidents. It also discusses in great detail criteria for determination of the accident planning zone of the Temelín Nuclear Power Plant. There is a part describing inputs, which are in this case available based on technology, and there are also characteristics of certain groups of source members from which radiological consequences are evaluated. The report contains evaluation of unified programs used for technological inputs as well as for evaluation of possible consequences of such accidents on the surroundings. At the end of the report there is a comparison with international approaches. Just briefly at the end – the document shows that minimization of risks of occurrence of a serious accident and possible measures for limitation of its consequences on-site, i.e. at the source, correspond with currently common procedures and attitudes applied in countries with nuclear power industry at an advanced stage. We have absolutely identical procedures for introduction and performance of protective measures in case something – very hypothetically because the probability is really very low as shown in the amendment to the report – how to effectively protect people and apply the two approaches contained in there, i.e. prevent deterministic effects of radiation and limit stochastic effects to the minimum. That is for the brief introduction, of course we are ready to answer your questions.

I would like to thank Ms. Drábová and now I will inform you of the procedure for answering individual queries. Those who sent their queries through the terminals – they were formulated there, appeared on my screen here and I give them to individual experts for answer. So I would like to ask individual persons as, I will call on them and who will be made familiar with the questions in advance, to answer the queries. One more thing – there will be some queries that are impossible to classify, they will be answered after the expert part. And the last thing – it may happen that there will be queries which will not be answered at this forum. We will not have the competent experts here. In any case, however, your queries and comments will not disappear, they will be used by members of the commission for their further work in the commission, for completion of this material and, at the end, you will be information at an Internet address where you can still send your questions. So now I would like start with the first two queries which I gave to Mr. Hezoučký and which involve the site operator.

1.9.3. Transportation

What influence will transportation of nuclear fuel into the power plant have on the environment and what is the practice abroad in this respect?

Asked by: Anonymous

Good afternoon, ladies and gentlemen. I received a question regarding transportation. What you saw on the monitor a short while ago – what will be the influence of transportation of nuclear fuel to the power plant on the living environment and what is the foreign practice in this field? The influence is zero, radioactivity of fresh fuel transported to the power plant is at the level of radioactivity of mineral uranium. The influence on the living environment even in case that the train is derailed or any other event characteristic for railways happens, there is no problem from the point of view of the environment but rather from the point of view of economic consequences since they are products – fuel elements are very expensive sophisticated machined product with a lot of labour required for it – enrichment, engineering and technical work. That is why there are efforts to restrict contacts or knowledge about transportation for the purposes of security against various extremists or terrorists who might want to find a way to the media and possibly damage the property. In any case this would only involve property damages, not damages to the environment. Practice abroad – lawful specification that the route and terms of transportation have to be kept secret is based on our law, we did not devise it. The laws in the Czech Republic also depends on the fact that we have joined international conventions that directly prescribe the same practice, so this is the same practice in all countries with nuclear power industry. Transportation of fresh nuclear fuel for our nuclear power plant in Dukovany has been performed for 17 years already and, as a matter of fact, this has not been the first transport to the Temelín Nuclear Power Plant. It has never been a problem, no indiscretion like this. The first transport went through Szcieczin in Poland and, due to indiscretion directly in the port, it has become this kind of spectacle on the media. That is what I can say about transportation.

1.4.6. Expected time of operation of the facility

How many years will be the Temelín Power Plant operated?

Asked by: Anonymous

Then there is a question regarding the expected time of operation of the facility: How many years will the Temelín Nuclear Power Plant be operated? We expect and have a program of controlled aging that should ensure that the technical life of the facility allow operation for 50 to 60 years. There is a program for monitoring of service life during the whole time of operation and this figure will become more precise. Of course there is also economic life, it is supposed that the nuclear power plant should be fully amortized within 30 years, so during the time of its operation it should earn money for some other source of power. Thank you.

I would like to thank Mr. Hezoučký. Now I would like to ask Mr. Macháček to answer two questions which came in here and which I gave him democratically.

2.5.2.2. Landscape

The influence of the Temelín Nuclear Power Plant on the Stropnice Valley was mentioned in the introductory word. I would like to know what the influence was and how specifically it was caused.

Asked by: Anonymous

2.5.13.1. Material and cultural goods

Are the Commission recommendations mentioned at the end of each Assessment chapter obligatory? There already exists the list of 65 cultural monuments and does the operator count on certain aimed maintenance work support of the cultural monuments?

Asked by: Anonymous

Ladies and gentlemen, there are two questions here. I will try to answer the first one myself. The other one will be replied by myself and Mr. Martiš. The first query responds to my introductory presentation and the person asking the questions would like to know how specifically the influence on the Stropnice Valley was produced. If you have the report at your disposal right now, or its digital form, it is on page 145 of our review. At the time the occupation of the agricultural land for construction of the Temelín Nuclear Power Plant was permitted, it was governed by 1976 legislation. It was specifically Act No. 102/104 dated 1976 Coll. – on protection of agricultural land resources. On the basis of the implementing regulation, it was necessary to return areas not used for agriculture or used extensively to agricultural production in the form of the so-called substitute recultivation for each occupied hectare of agricultural land. It was a typical instrument of a regime that did not acknowledge ownership rights. So for occupation of about 130 hectares of land for construction of the power plant, it was ordered to additionally recultivate waterlogged area of lower bottom land in Stropnice in the area of about 540 hectares of extensively used agricultural land. I think that if we had been asked and if I had incorporated in the scoping list, on behalf of my colleagues, retroactive evaluation of those influences of construction that can be assessed, we assume that this influence is assessable because the territory was affected by the technical modification of the course by dewatering, and it can be concluded that this modification has resulted in a loss of accumulation space that could accumulate about 3 million cubic meters of flood water if we assume the average height of inundation 0.5 meters above the terrain during heavy rains. So I think that one of the measures is to discuss again the issue of revitalization of this area at least to a condition that would be close to the original landscape in terms of recovery of basic functions of the bottom land destroyed by this technical interference. That is all for the first question.

The other query is a bit more complicated. It involves chapter Tangible property and cultural heritage and we can divide it into two parts. First – are the recommendations made by the commission in the review always at the end of individual chapters binding? The other part is slightly more specific – that there is already a list of 65 cultural memorable objects and the operator counts in this case on targeted support of maintenance of cultural heritage. Just a note for the first query – we are basically an expert team that makes expert recommendations based on our evaluation of influences and the list of these recommendations is the result of our evaluation. I want to emphasize that we are talking about over-standard voluntary review of influences of the facility on the environment. The binding liability for these matters shall

be then accepted either by competent state authorities or they will be directly reflected at the policy level. But I will give the floor to Mr. Martiš who will continue – if I can, Mr. Chairman?

Yes, sure.

Thank you. The four of us have been appointed on the basis of a resolution of the government by Prime Minister. We suppose that our expert recommendations, our expert opinions will be used for policy-making decisions. Our output is really an expert opinion, expert recommendations backed by us. As for specific queries regarding cultural heritage and tangible property. This part was prepared for us by our colleagues Mr. Klápště and Mr. Korčák and a colleague from the National Material Protection Research Institute. The mentioned list of 65 cultural objects is prepared. We would like to thank for the suggestion. During final editing of this material, this review, we will add the list so it will be a part of the text. As compared to the original draft, we recommend to introduce monitoring of possible changes in microclimate in the Southern Bohemian Gallery in the Hluboká castle. We believe that this recommendation will be also treated with due respect. As for the question whether the operator counts on a certain targeted support of maintenance of cultural heritage – if my information is correct, it is a matter of economic instruments that would allow the operator to support maintenance of cultural objects as it is common in all developed countries in case of sites of this scale and importance. I believe that our recommendations will be so urgent that the political circles will make all efforts possible to secure legal framework for the operator to support the development of the areas around the power plant that have been absolutely depopulated due to past decisions and cultural objects that have remained there. For now there are some legal problems which do not allow the operator to do so. Thank you.

I would like to thank both members of the commission. Queries are starting to accumulate here, so I will give another query. To change the people having the floor, I now ask Mr. Kříž to answer the question that will be projected shortly. One more note. As you can see in the bottom line, it always says: Asked by: Anonymous. Of course it is your right. However, it is interesting that unclassifiable questions that I have here are all undersigned, while others, specific questions there are no names for unknown reasons.

1.8.1. List of countries on which the planned project could have a potential influence

How do neighbouring countries (except for Austria) and countries that could be potentially influenced by the project respond to the Temelín power plant?

Asked by: Anonymous

How do neighbouring countries respond to the project? Until political changes, discussions about nuclear safety between the West and the East had been very sporadic due to the existing situation. It all changed in the 1990s and I think that the first major political step was the resolution of G7 made in Munich in 1992, which was basically a statement on safety of the so-called Eastern units and divided them into two groups. Units with material design or safety faults which should be operated only for a necessary period of time, and units whose safety is basically comparable and certain defects can be quickly repaired. VVVR 1000 units were classified in the latter group, so there was no doubt about their safety from the very beginning. Shortly after that, the International Atomic Energy Agency launched a large extra-budgetary program financed by Western countries which analysed safety of individual types of VVVR reactors and RBMK reactors. The output was a list of safety issues related to this unit. I can say that the Temelín Nuclear Power Plant is considered a plant that has complied with all

required design corrections to avoid aspects that were indicated as slightly deficit best of all and virtually to full extent. There was no urgent safety problem where very quick solution would be necessary and the risk of impairment of safety would be relatively acute. As for – this is at the multilateral level and of course there are also other programs in addition to the program of the IAEA. As for neighbouring countries, you definitely know that we concluded a bilateral agreement with Austria in 1982. It was something unique at that time in Europe, between countries of diverse political regimes and approach to nuclear energy. It was followed by some similar agreements, for example between the former German Democratic Republic and Denmark or the former Soviet Union and Finland, so we – former Czechoslovakia – were a pioneer in this respect. Of course not completely because the political situation did not allow it but there have been contacts for almost 20 years. After Chernobyl, the agreement was activated and reviewed in a way and the Melk process is another reinforcement of these contacts. It is not a dialog with Austria – it is a monologue where the Austrian side keeps asking and casting doubt and the Czech side patiently explains. However, we have one more partner neighbouring with us – Germany – where contacts are at a high professional level, all issues are solved at a technical level, as between two partners. The German side has expressed some very critical and open objections to some items but as far as I know virtually all items have been concluded, i.e. the German side has accepted solutions proposed to remove certain safety or design faults. You could ask why I keep repeating something about faults. If we analysed other nuclear power plants in this way, we would also find certain small faults and things that could be improved. The world focused on RBMK power plants after the Chernobyl accident. So the response of all countries, except for very hysterical response of Austria, is that either they do not respond – for example Poland – or a country that is at the top in this field communicates with us very openly and accepts our solutions. Thank you.

I would like to thank Mr. Kříž. Now I will ask Mr. Hanzlíček, although he already mentioned this question in his introductory presentation, and then Ms. Fechtnerová. Is she somewhere in here? Yes, very well. So now the floor is Mr. Hanzlíček's.

2.1.1. Atmosphere

What parts of the Temelín Nuclear Power Plant can pollutants be released to the atmosphere from?

Asked by: Anonymous

There is the question what parts pollutants can be released into the atmosphere from. I have mentioned this during my introductory presentation already, so I will be very brief. This especially involves three ventilation stacks, one for each unit and one at the Auxiliary Building. At the same time, I also mentioned that there is an extensive monitoring network that secures that these radionuclides are measurable and their release to the atmosphere is prevented. I would also like to mention three recommendations that would help keep the atmosphere so it is not polluted with such substances. First recommendation – after setting the Temelín Nuclear Power Plant into commercial use, it will be necessary to provide for exact continuous measurement of gaseous radioactive discharges using the operator's existing measurement network. Second recommendation – it will be necessary to continuously improve the existing radiation monitoring network operated by state authorities of the Czech Republic. Third recommendation – the Czech, German and Austrian public has to be regularly informed of all measurements.

Thank you. I would like to ask Ms. Fechtnerová, and then Mr. Sýkora.

2.2.4. Effects on the current use of water

What will be the influence of discharges on the health of fish and reduction in their number or their variety?

Asked by: Anonymous

Ladies and gentlemen, my question involves effects on the current use of water and the influence of discharges on the health of fish and reduction in their numbers or variety. Is there any experience abroad? I can say that the discharge of wastewater will not lead to any change in the health of fish or any influence on their variety and variability. I can support this statement with results of the state study conducted by the Ministry of the Environment and coordinated by the Water Management Research Institute. This study was performed between 1989 and 1998 and the main focus was on hydrology. It basically proved and dealt with the influence on fish from the point of view of chemical composition of wastewater and radioactivity. It also monitored the content of activity in sediments and the findings of this study did not prove any influence – and the prognoses also actually did not prove any influence on fish. It has been virtually confirmed by the findings of this commission – Professor Říha who mentioned that the influence of Temelín and discharge of wastewater from Temelín on the environment would be negligible.

I would just like to complement the information given by Ms. Fechtnerová. Within the framework of efforts to use low-potential heat in 1980s, breeding of fish in this heated water was also considered. This eventually did not happen for economic reasons. I would also like to ask Mr. Macháček to briefly complement the information.

Thank you. We can basically say on behalf of our commission that the mentioned findings presented by the expert in water management and operators, so we have confirmed that we have dealt with these issues and on page 148 of our report you can find results of the comparison with the already verified situation in the Dukovany power plant. And we can basically state that the biocoenoses in Vltava downstream of the Temelín Nuclear Power Plant should not be damaged due to discharge of tritium water because the effect on water biocoenoses will be lower due to the much higher dilution and lower values of tritium in water. And then I compared individual values. Of course Ms. Žáková could give further information who prepared this part of the review for us in this sense. If she wants?

No. That will do for now. And another question which shall draw increased attention, was given to Mr. Sýkora. Since I consider this question very important, I will not ask you, Mr. Sýkora, to make your presentation as brief as possible. Please be just brief.

2.7. The possibility of occurrence of accidents

The probability of serious accident connected with the fuel fusion.

Name of questioner: Radomír Jošek

Ladies and Gentlemen, good afternoon. Let me introduce myself. I work in Temelín Power Plant as the head of Nuclear and Operation Safety Department. The question is: possibility of occurrence of accidents, probability of serious accident. As for this issue, I would like to say that the so called Probability Study of Safety was prepared for the power plant in 1993-1996 with the objective to assess the probability of individual scenarios, which could result in the damage to fuel. The purpose of this analysis was to select the possible sequences of failure of

equipment, failure of human factor and assign and quantify the measure of probability of situation that might lead to the degradation of the state of fuel using the probability assessment method. Saying this I would like to indicate that it is possible to create the whole list of events selected in this manner, which have their measure of probability, in case of "the most probable" scenario we talk about number 1 per 500 thousand years of operation of nuclear power plant. Other scenarios, which were selected within this analysis represent a probability in the order of million or tens of million years. This was for the beginning.

As for the term "serious accident" and relation of this term to the environment, I would like to call attention to the fact that in most cases the Temelín Power Plant is being connected with the fate of the Chernobyl Nuclear Power Plant. Many of you who deal with the accident issues certainly know that there was another accident in 1983 in the USA, which can be classified as "serious accident". This accident happened in the power plant "Three Mile Island" in Pennsylvania and it was accompanied with a fusion of about one third of reactor core. Why do I mention this accident? With regard to the fact that "Harrisburg" power plant is situated in a relatively densely populated area, it is necessary to say that the impact of waste formed as a result of accident in the power plant in the USA on the environment and health of people was minimal. Therefore, I would like to stress that a serious accident does not have to mean impact on the environment and endangering of people at all.

In the third part of my speech I would like to say that the study of probability selected certain scenarios. The serious accident goes in for the disturbance of one of the safety barriers, which is the integrity of fuel in the reactor core, however, this is not the last barrier, which stands in the way of escaping radioactivity into the surroundings. As I mentioned before the most probable scenarios were selected within the study, and in 1996 – 98 a relatively significant study about the resistance of remaining barrier, which is a containment standing in the way of escape of radioactivity into the environment and which perfectly fulfilled its role in Harrisburg and prevented serious endangering of the environment, was prepared for Temelín Power Plant. The studied phenomena were e.g. steam explosion, explosion of hydrogen, which releases during serious accident, direct heating of containment, contact of fused material with the containment concrete and the study proved a sufficient robustness of the containment construction in the Temelín Power Plant. By all means and with full awareness of responsibility, it is possible to declare that in the course of first 24 hours, there has not been any scenario identified, which could lead to the so called category of speedy escape from containment as a result of disturbance of its integrity. I think that this result is fully comparable with the containments of power plants operated in Western Europe or the USA. That is all for the beginning. If any questions of technical character arise, I would be pleased to answer them.

I would like to add that as chairwoman has already said a detailed presentation on the expert was made between the Austrian and Czech parties on 4th April, where the relatively detailed data about the analyses that had been carried out were presented, as well as about the courses of parameters in case of occurrence of the so called serious accident. Thank you.

Thank you, Mr. Sýkora. Further question goes to Mr. Macháček.

2.5.2.2. Landscape

The nature of landscape and aestheticity are matters, which are strongly subjective. What methods are used to be assessed?

Name of questioner: Anonymous

Thank anonymous questioner for your question, because I think that it is good to talk about such matters. Firstly, there are matters, which are strongly subjective. They certainly are, they are even projected into the perception of the factor of well-being and these criteria. The nature of country was included in the Czech legislation only from 1.6.1992, when the Act no. 114/92 Coll. on the Protection of Nature and Country came into force. Temelín Power Plant had been built before this Act became effective, but in spite of that I think that it would be right to apply the same measures of this Act to this power plant. So in this connection it is necessary to mention – as the power plant is here and nobody has deleted it yet - that it has significantly influenced the nature of country,

because a new character of territory was created on the area of approx. 140 ha with a considerable share of compacted surfaces and permanent change in the components of the country nature, while strengthening the negative aspects – compacted surfaces, built-up territory, although mostly not on the plough land. If taking the scale of country into account, it is true that the dominance of power plant is enormous as the towers are 158 m high, i.e. they exceed the vertical scale of country three times. The construction of Temelín Nuclear Power Plant has a very unfavourable and considerable effect, especially due to the construction of view dominating buildings, which suppress the original scale of the country, so it is actually a set of new scales and concentration of new buildings and at the same time a liquidation of some structural elements – gardens, dwellings, etc. So if aspects of the Act no. 114/92 Coll. are applied from the point of view of the nature of country, it is necessary to objectively and indisputably come to a negative conclusion, because it is not possible to make any technical measure, which could reduce the impact of cooling towers visible within an ambit of 40 km. This is the reason why we approached differently to the individual aspects of evaluation and the issue of the nature of country is a case, which can be taken as an example of influences, which are indisputable and getting the strictest possible rating. And as for the effects on nature and country and from the point of view of considered aspects we came to the conclusion that roughly 55% of negative effects on nature and country is projected due to the protection of the nature of country. Mr Chairman, I would like to ask my colleague, Mr. Martiš, to provide some additional information.

Of course. Please, Mr. Martiš.

Thank you. I have the honour to coordinate a three year governmental project focused on the protection of country, in which one of outputs will be – I hope - a binding methodics for the evaluation of the nature of country, which will represent a culmination of all the hitherto methodological procedures, on which our expertise background was based and which was used for the chapter managed by colleague Macháček. This methodics is being prepared by Ing. Igor Michal from Prague and Mr. Jiří Líf, architect from Brno. After it is commented by experts, this methodics will be tested in summer on the model pilot projects and we have selected Temelín NPP as one of facilities in our country that cannot be neglected, on which we want to test this methodics. Although this will be done after the meeting in Melk, but we believe that by that time nobody will remove those towers and we will be able to inform you about the results of testing this methodics in Temelín in publications.

Thank the members of Commission and please, present your further question ...

Unclassifiable

While assessing the effects on the environment did the commission compare some areas of Temelín NPP with power plant SIZEWELL B?

Name of questioner: Lubomír Sklenka

...one of unclassifiable and signed questions asks the members of Commission, if they compared some areas of Temelín NPP with the English power plant "SIZEWELL B". I discussed this question with the members of Commission, this comparison has not been made. If Mr. Lubomír Sklenka has any special question concerning this power plant, or maybe during a free discussion, I can refer him to the present employees of Investprojekt, who visited that power plant and participated in the preparation of some documentation for ETE. So the answer is - Commission has not made a comparison.

Another question has come. Please project it and probably it will be again Mr. Sýkora, who will answer it. I know that you did not have time to prepare the answer as the question has just come.

2.7. Possibility of occurrence of accidents

Request to complement the answer to the question concerning the fusion of fuel.

"Let him quantify the risk taking into account the years of operation of reactor".

Name of questioner: Anonymous

I am not sure if I understand your question. The probability is quantified by numbers, the number I mentioned was 4×10^{-5} , or once per 400 thousand years of operation. This is a number I mentioned in my previous speech, if the questioner, who did not mention his name, contacts me, I will be willing to further consult this issue. I am not sure if my answer satisfies the questioner, but the answer is as I already said in my first speech.

Professor Říha recurs to the previous question concerning the comparison of Temelín NPP with the English power plant Sizewell and now I ask him to present his statement.

Thank you. I have to repeat again that comparison – a comparative analysis has its sense only if input and output data are comparable. E.g. from the climatic point of view, English islands are different from our area in the central Europe. Therefore, we have compared what is comparable, i.e. nuclear power plant Dukovany, which is comparable by its capacity, the difference in the output is 14%, Dukovany has 1760 megawatt, in Temelín it shall be 2000. The similarity from the morphological, geological, climatic and other factors is very significant to be able to make any conclusions on the basis of this comparative analysis. So, as far as the effect on hydrosphere, surface and ground water facility, I would like to explain the method, which was used to make a comparative analysis. The analysis was made by the assessment of hydrological data, surface water samples, quality of water samples, consumption of surface water, drinking water samples, quantity of waste water, composition of waste water, difference between the quantity of pollution of water samples and quantity of pollution of waste water, further, the assessment was made from the point of view of admissible values of pollution of waste water, admissible limits of pollution and their drawing in case of power plant Dukovany, further, from the point of view of radioactivity of waste water, quality of water in waste water recipients, classic pollution, what is not negligible at all, i.e. from the point of view of chemical, organic, macro-nutrient and other effects and radioactive pollution. It means that on the basis of these parameters we came to a conclusion that the limits set for Temelín NPP are very realistic. With regard to the fact that the input conditions in southern Moravia are considerably worse than in Temelín, the whole technical design is very conservative, i.e. it has a high coefficient of safety. Only under such input conditions it is possible to make comparison of something with something. Thank you.

Thank Professor Říha. Here is the so far last delivered question - I ask Mr. Chairman, madam, Drábová. It is a very frequent question.

Unclassifiable question.

Can the combination of western and eastern technologies negatively influence the operation or safety of ETE?

Name of questioner: Anonymous

The question is: Can the combination of western and eastern technologies negatively influence the operation or safety of ETE? I think and I am sure that it cannot. The state supervision authority must be sure of it. Why am I so sure of it? – it is due to the method used for the assessment of safety of nuclear power plants. There are a lot of requirements and criteria determined for the nuclear power plants to prove that the safety requirements have been met. Of course, these requirements can be met using various methods and the question is how the operator proves in the licensing process that a certain device included in the project meets the requirements, which have to be met to secure the safety of such device. It means that the point does not reside in what I have there, or if it was manufactured by someone east

or west of Aš, but the point is, if what I have there meets the requirements determined for such a device, if devices are able to communicate with each other, i.e. whether the designer was able to explain them well, how to mutually communicate and what data they shall exchange and if that all is ensured and this is not the only example, Temelín NPP is not the only example of combination of technologies, when a device consists of components of different suppliers. These days it is normal in all industrial branches not matter they produce from simple things to the most complicated industrial units, that the supply in form of turnkey contract is impossible. So the point is how well you can define inputs, algorithms, functions that have to be met. And I have to add that nuclear power engineering is a branch, which is well ahead. They are comparable with it, nevertheless it is a care devoted to the project and fulfilment of the project requirements that guarantee together with a special state supervision in this area that it is not decisive where the device was manufactured.

Thank Mr. Chairman, madam....

END OF SIDE 2 OF CASSETTE 1

This a very nice question. Please, project it. This a room for Messrs Martiš and Macháček. As a professional tandem they will certainly complement each other.

Unclassifiable

What would be the result of assessment of Karlštejn castle like using criteria applied in the analysis of effect of ETE on the country ?

Name of questioner: ing. Petr Hlavatý

Thank Mr. Hlavatý, one of the non-anonymous questioners, for this nice question and I will answer the way I can afford to assess the nature of country, i.e. only subjectively as there is not any binding methodics. I think that at that time, when Charles IV. had that monstrous castle built in the beautiful country of the Czech Karst the assessment would be about five. However, if looking at it today, the assessment would approach to one, because the castle would not be there today, but I still talk about Karlštejn castle. Thank you.

Would Mr. Macháček like to add something?

Of course, there would be a lot to add. In principle, my colleague, Mr. Martiš, has said all. The Czech legislation as one of key factors of assessment of the nature of country, has two moments. It is a moment of historic structure of the country and the moment of measure and relation to the country. I.e. what my colleague said is applied. In principle, at the time, when the area was deforested in order to build Karlštejn castle at that end to be seen, so it is natural that when applying the present legislation, the castle would represent a problem. But it became a part of historic structure of the country, although exceeding by its measure some other surrounding objects. Similarly we could assess Ještěd transmitter. In this case I can provide more detailed information, because this transmitter more or less finalised and potentiated the nature of country although monstrously devastated the top of hill during its construction. Almost the same transmitter is in Krkonoše on Černá hora (*Black Mountain*). It is a monumental difference, which will always represent a negative country dominant.

Thank you. Anyhow, I would use the standpoint of non-governmental organisations, which came today to be present at this public discussion. I would ask Mrs. Drábová, whether the answer of Mr. Sýkora concerning the assessment of the risk of serious accident is considered as sufficient and fully consistent. As a representative of SÚJB, she has naturally the final word.

Simple answer - yes.

Thank you. And then I would like - I do not know if the representative of SÚRA is present: documentation avoids assessing the whole nuclear-fuel cycle. Madam, would you like to answer this question? Mr. Prows? It is a question asked by ecological initiatives: Documentation avoids assessing the whole nuclear-fuel cycle.

The answer is similar. My name is Prouza, I work for the State Office for Nuclear Safety, I am a nuclear physicist, I have been dealing with the issues of radiation protection for years and now I represent the chairwoman in the area of radiation protection. As for the question, the answer is similar to that of chairwoman as far as the assessment of nuclear safety issues. When SÚJB approves or licences Temelín NPP, it assesses the whole documentation from the "Siting", which means the start of the whole program, i.e. whether the power plant could be situated on a certain place to "Decommissioning", i.e. when the power plant will be liquidated. It means that if the permission to start operation is issued, the documentation has to contain the submitted proposal, how the power plant will be liquidated, how much it will cost to liquidate it and the costs will have to be assessed by the organisation designated by the law - it is the Fusion Product Waste Storage Authority. This authority is administered by the Ministry of Industry and Commerce and it was established on the basis of Atomic Law. So everything has been assessed, the answer is the same as in case of nuclear safety - it has been assessed and meets the requirements of the Czech legislation. Thank you.

Thank you. Another question is for the head of Temelín NPP – please, project the question.

1. Basic data on Temelín NPP

What method is used to ensure the qualification of senior managers ?

Name of questioner: Miroslava Semelová

The question "What method is used to ensure the qualification of senior managers?" The method is based on the guidelines prepared in advance and applied to not only senior managers, but all employees, who work either as operating personnel or technicians. The guidelines are based on the decrees, the employees go through a lot of theoretical and practical trainings, the personnel operating unit are trained using simulator, which is located directly in the premises of power plant. In addition to internal exams of training centres, some employees have to pass state exams. The levels of preparation exist separately for engineering-technical personnel, operating personnel, high school graduate personnel and apprentice school graduate personnel. The levels are titled – A, B, C, α , β , γ etc. It is a complete system. Who is interested in more details, may contact us. Thank you.

Thank Mr. Hezoučský. And once again, I would ask Mr. Kříž, although it seems that he has already answered this question - List of the countries, which could be potentially influenced by the planned project. It is different from the previous one by the conclusions stated below this text.

1.8.1. List of the countries, which could be potentially influenced by the planned project

State the list of countries, which could be potentially influenced by the planned project. State more details.

Name of questioner: Anonymous

If taking into account what accidents could occur, the distance represents an important factor. The distance to the frontiers with Austria and FRG is about 60 km, the distance to the frontiers with other neighbouring countries is more than 150 km. So the possible doses in emergency situations have been assessed within the project and the results were included in the study too. In the report you can find that in case of several the so called most serious project accidents, the doses, which a citizen of Austria or Germany would receive represent about 1% of natural background. As for serious accidents and it would be good to mention such information here, because the calculations have been made that the more important is a fact that neither Austria, nor FRG has to activate or prepare external emergency plan in terms of taking measures, i.e. distribution of iodine tablets, hiding, etc. The maximum that could happen in case of serious accident described by Mr. Sýkora is that information about the occurrence of such event would go from the Czech Republic to the neighbouring countries on the basis of bilateral relations. Then, both countries would carry out the monitoring on their territories, they would exchange information about the results of monitoring with the Czech Republic for a certain correction and in the country with the extremely unfavourable meteorological situation, i.e. category F, it could come to the limitation of use of some foods or their distribution. All that is written in the report of serious accidents, so I do not say anything new. These are absolutely maximal consequences for the neighbouring countries. It means that even if such accidents about which the Austrian party talks so often occur, the study or analyses prove that the only thing required would be to carry out monitoring to get a picture about a particular situation as it is impossible to simulate all such situations in advance. It is a monitoring that represents a significant part of emergency plans, as it verifies and specifies the situation. This was my attempt to provide more details required by the questioner. I hope that my answer has satisfied him.

Mrs. Drábová would like to add something, then Mr. Prouza.

Everything what Mr. Kříž said is true. Just a little to add. Nature does not behave according to calculations and if there are two same accidents, the consequences depend on the meteorological conditions, if it does not rain at a distance of 60 km, but it rains at a distance of 100 km or 200 km, the same level of surface contamination can be registered even at longer distances. What I present here is a picture of realistic situation, which occurred after the accident in Chernobyl. The areas in red colour are areas with the same level of contamination of terrain. This is just for explanation. It is necessary to count on such situation. But what Mr. Kříž said is true, even in this case it will not be necessary to take any pressing or other protective measures. I would add to his answer, the Czech Republic is currently preparing the same agreement on the provision of information about the danger of accident with Poland and Slovak Republic as that of concluded with Austria. Thank you.

Thank Mr. Prouza. Now Mr. Mynář from Investprojekt, because he followed up the question concerning Sizewell and he wants to project one slide regarding this issue. Please, Mr. Mynář, take the microphone.

Slide is here. Good afternoon. My name is Mynář, I work for Investprojekt Brno. Our company prepared EIA documentation, which is generally called "Documentation of 78 changes in Temelín". I would like to bring the matters to the right measure, it is not a documentation of the final limited number of 78 changes, it is a documentation of all changes in Temelín, which at the same time assesses the whole power plant, the effects of Temelín Power Plant on the environment. When preparing this documentation, we naturally expected the question of comparison of Temelín with similar units in Western Europe. For this purpose

we contacted British company NNC and assigned 3 issues, 3 tasks. One of them referred to the reference unit in western Europe, with which it would be possible to compare Temelín NPP and two remaining issues were: to what extent the Czech legislation concerning the environment is comparable with the legislation effective in the European Union and in Great Britain and to what extent the nuclear legislation is comparable. The conclusions of assessment were relatively uncompromising. The environmental legislation in the Czech Republic is fully comparable with that of the European Union or Great Britain, the same applies to the Czech nuclear safety legislation, which corresponds with that of western Europe or European Union. The one little disproportion was found on the level of realised probabilistic safety assessment in the Temelín Power Plant, where PSA was carried out up to the level 2, while level 3 is required in Great Britain. Mr. Sýkora would probably better specify this issue, however, level 3 is required only in Great Britain, not in the European Union. The conclusion is that there were not any facts identified, which could prevent licencing of Temelín Power Plant wherever in western Europe and Temelín NPP is fully comparable with reference units in western Europe.

Is that all, Mr. Mynář ? Thank you. And now, please, Mr. Krs.

Unclassifiable

Differences between VVER and RBMK reactors and specification of possible problems.

Name of questioner: Ota Fišer

Well. I would like to answer the question concerning the differences between VVER and RBMK reactors and specification of possible problems. There are currently several concepts of nuclear power plant reactors used in the world. The most spread concepts are two concepts, the so called pressure water reactor and water boiler reactor. The fuel in both concepts is placed in the boxes, mostly made of metal, and the whole set of fuel is placed in the reactor pressure vessel. The cooling medium is ordinary denatured water. These reactors are usually placed in another one big protective casing, the so called containment vessel. VVER reactors are of that type - they are pressure water type reactors. The concept of VVER reactor was developed at the beginning of the 50's - 60's in Westinghouse and it has been repeated by more and more manufacturers. E.g. pressure water reactors, which you can find in France or Germany, are based on the original licence of Westinghouse company. RBMK reactors are of a little bit different concept, the so called pressure channels concept, when fuel is placed in the individually separated pressure channels, where the cooling medium is again water, the whole construction is enclosed with the graphite blocks. Graphite is used as moderator. The whole construction is much bigger, the diameter of reactor core and its whole volume is bigger, which brings certain risks to the control of operation. The difference is that there is not any protective casing above this arrangement - there is no containment there. RBMK reactors were developed in the former Soviet Union, mainly from the military reasons in order to produce the military material for production of nuclear weapons. As the demand for this material was gradually decreasing, it was decided on the combination of the reactors, which were used both for production of military material for production of nuclear weapons and production of electric power, i.e. they were used as power plants. I think that RBMK reactors have not been licensed in any other country, but the former Soviet Union, as the deterministic requirements for nuclear safety in most countries are such that it would not be possible to license these power plants. This is proved by the fact that the former Soviet Union exported only pressure water reactor technology, not RBMK reactor technology. Thank you.

Thank you. Before another question is asked, I would refer back to the question of Mr. Ota Fišera or Fišery ?, I am not sure because he signed his second question as Fišera. Please project the slide – B7.

1.4.1 Location

What method was used to select the locality of project?

Name of questioner: Ota Fišera

Very briefly - in the 80's Czechoslovakia decided to follow the way of nuclear power engineering and in addition to north-Bohemian coal region, it was necessary to build energy sources in other localities – eastern Bohemia, central Bohemia and southern Bohemia. In southern Bohemia there were 25 localities, which were considered as future sites, the critical points of selection were not only the density of population, but also technological water supplies, as well as seismic resistance of the selected site. By the last moment it was Dubenec, which was selected as future site, which allowed to build two to four units. Temelín was finally selected on the basis of Soviet expertise prepared at that time, which stated the possibility to construct six units on the complex rock block. Finally it was decided on the construction of four units, later reduced to two units. As far as seismic conditions, it will be Mr. Schenk, who will complement the information I have just provided. He was intensively dealing with this issue at that time – please, Mr. Schenk. He is obviously pleased of my calling him.

Before he comes, Mr. Hanzlíček will provide some additional information.

I would like to complement information presented by previous speaker. The locality of southern Bohemia was selected due to 4 factors. First, it was a big concentration of output in northern Bohemia and necessity of its gradual replacement, what happened at the end of 1989 as a result of effect of Act on Protection of Air, a demand for a power producing plant in the southern Bohemia, small industrialisation in this region and sufficiency of work force, and last but not least, availability of cooling water in the Vltava river.

Thank you. I ask Mr. Schenk for a brief explanation. Please do not take me wrong, I do not consider you as the principal responsible for the selection of locality. This has not been meant like that at all.

I do not take it as we were the principles responsible for the selection. Not at all. I do not think that seismic situation was a decisive criterion of selection. I have prepared a little map of earthquakes in southern Bohemia. I was surprised - not as for seismic conditions - that within the localities mentioned by Mr. Doubrava, there was one locality - I think it was Velký Tisý that even at that time there were other criteria used to make decision about the future site. When it was found out that something was going to be build in the area of Tisý, the construction could change the migration of birds and this was the first main criterion of selection, not seismic conditions, so another criteria existed at that time. As you can see, there is no effect of local earthquakes in this area from the seismologic point of view and the effect of earthquake can be considered here mainly from the southern part, from the "alpine" stripe, including the Alps, we can see northern Italy. The calculations of possible threat were prepared using methods codified in 1968, i.e. at the time when the selection procedure was in progress, therefore we used these methods, which are valid up till now. I would like to add something. It is not a case of seismic level meant as occurrence of earthquakes, but it is the occurrence of seismic effects on the given place. And there, maybe you remember, or if you follow the press, it sometimes comes to – I do not want to say absurd - cases, when there are

more damages to the buildings or individual facilities on the places, which are more remote from the focus than on the places which are located closer to the focus. This is given by the geological composition as itself. And this was a criterion I would like to talk about. The region of Dubence and surrounding area are situated in the south-Bohemian basin, where there are sediments - yes, they are there, I will talk about non-consolidated sediments, which may increase the seismic effect twice. Twice is meant in intensity, because in case of acceleration it is even more, because there is an exponential scale. This was the reason why it was decided in favour of Temelín, because Temelín is situated on the solid underlying rock and katazone gneiss unlike Dubence, where there are sediments. Another criterion, if I remember well, was the fact that construction of Temelín would affect three villages, while in Dubence it would be 9 or 12 villages, I do not remember exactly, it was 20 years ago. The third criterion dealt with the fact that in case of escape, I do not mean accident, but any escape, let say escape of dirty water or radioactive water into the surrounding areas, so water which goes through sediments may spread uncontrolled. Now you know the problems with contamination. Such a danger did not impend over the Temelín area. It is probably enough for explanation.

Thank Mr. Schenk. I would like to ask Mr. Hezoučský to answer the question concerning emergency plans – B10.

2.7.3. Emergency plans

The District Authorities are responsible for the implementation of emergency planning in the area surrounding Temelín NPP. After the District Authorities will be cancelled, the responsibility will be delegated to Regional Authorities. Will the continuity be maintained? Is there a possibility that during an interim period there will not be any authority responsible for this issue?

Name of questioner: Václav Brom

It is true that the external emergency plans lie within the competence of the state administration. At present it is the competence of District Authority and after the regions are formed, the competence will be delegated to the Regional Authorities. The transfer is ensured. As majority of the territory that is taken into consideration for emergency planning belongs to the district of České Budějovice, it is relatively simple, although the emergency planning zone trenches in the districts Tábor, Písek and Strakonice. Due to a new legislation according to which the Regional Authority will be responsible for external emergency plan, it will be easier for us as there will be only one state authority to contact. I was informed that the currently effective emergency plan is being amended and the competence of District Authorities is still in force and the amended emergency plan will be signed by the district supervisor.

I would like to embrace the opportunity that Mr. Hezoučský is at the speaker's desk and I ask him a question I do not identify with, it is a question of Karel Dohnal – A 16.

Unclassifiable

Why ČEZ and ETE are passive in providing the public with information about the principles of nuclear power engineering and operation of nuclear power plant (in media)?

Name of questioner: Karel Dohnal

Why ČEZ and ETE are passive in providing the public with information about the principles of nuclear power engineering and operation of nuclear power plant in media? In my opinion ČEZ and ETE try not to be passive, try to inform the public. ČEZ and ETE make presentations, as well as employees of our company, my colleagues take part in various meetings, we organise discussions at high and elementary schools, we publish literature and documents to be understandable by the public with secondary or general education. Probably, there are still some reserves in our presentations in media, but you can believe us, it is partly due to the fact that we cannot get into the media. There is an effort on our part, we quite often write articles. I am lucky that if I write an article, which is topical, it is published, although with certain amendments, bobtailed, abbreviated and sometimes with inappropriate title. But in most cases the articles of my colleagues are not published. So, if somebody is interested in nuclear power engineering, he or she may visit information centre in Dukovany, Temelín or the main administration office in Prague, Jungmannova 29, where you will have an opportunity to familiarise with the Czech nuclear program, which is currently called "ČEZ" nuclear program, but it is our joint nuclear program. Thank you.

Thank Mr. Hezoučký. I would like to ask Mr. Klumpar, if he is present, raise your hand. I do not see him. Has he left ? OK. There is another unclassifiable question, I would ask, probably Mr. Tyc, who also asked me to present his speech. The speech of Mr. Tyc will consist of two parts. In the first part he will answer this unclassifiable question and then he will provide you with some more information. Mr. Tyc, you are given the floor.

Unclassifiable

We are interested whether psychologists deal with a negative impact of half-truths disseminated by the ecological initiative South-Bohemian Mothers on the psychic of people. Is it possible to sue them for a wilful damage to health ?

Name of questioner: group of anonymous questioners

Good afternoon, my name is Jiří Tyc, I am employed in Temelín NPP and I also work in the South-Bohemian Fathers association. I will answer the question you can see projected behind me. As far as I am informed, there has not been any psychological study prepared on the negative impact of half-truths on the psychic of people, but in my opinion such a research would be probably a good idea, because when travelling by the Czech Republic and talk about Temelín NPP with children at schools, it is obvious that there is always a certain disseminated fear. It is very easy to spread fear and wake negative emotions in people and it is very difficult to fight against it. If someone tells you at the demonstration on the frontier at the time when Temelín unit was blacked out, what is quite - but not absolutely - normal and routine matter - that we were just one step from the tragedy like in Chernobyl and you hear it from a mother with children, you say to yourselves: "Jesus, what are they doing in that Temelín!", then it is quite natural this will result in creation of big and deep doubts inside the people and it is very difficult to fight against it, because even if you technically substantiate the problem, some people just do not want to understand your explanation. This causes big damages and it is a pity that representatives of "South-Bohemian Mothers" are not here to give explanation and I believe that they wilfully misuse feelings, because they are without any chances in the technical field. It would be interesting to prepare a research focused on such issue, but probably it is a matter of money, who would invest money in such research. And even if such

research was finally prepared for the state or money of ČEZ, it would be immediately disputed by those initiatives. But the damages have been certainly made. We can observe them, when travelling and discussing with children at schools, we encounter them at every step. This was my answer to the question.

And now I would like to have a brief speech. The standpoint of non-governmental organisations concerning the process of assessment of effect of Temelín NPP on the environment according to the Melk's agreement has been mentioned today several times, in fact, it is a standpoint of those several organisations, which do not agree with Temelín NPP. These organisations had a press conference in České Budějovice yesterday and I would like to add that this standpoint is presented like a standpoint of all non-governmental organisations. Our association issued a press release stating that we dissociate from this standpoint and express that it is a pity that these non-governmental organisations, who were against Temelín NPP, are not here, because they confirmed by their absence that they do not have any arguments against the report, which is being presented today, and they are not capable to argue about anything what they consider untrue in the report. They just confirmed that the report is good. And it is logical that they are not here, because they cannot afford to be at the meeting, where it will be proved that Temelín NPP has a very small effect on the environment. Any positive report issued in favour of Temelín NPP is unacceptable for them. That press release has been signed not only by "Czech Fathers", but also Czech Nuclear Company", Czech Nuclear Forum, civic association Vítkův hrádek, Association of tenants of the Czech Republic in České Budějovice, section of the young at the Czech Nuclear Company and also women's organisation Women for Nucleus. Thank you.

Thank to Mr. Tyc. Now I would like to ask Mr. Čečil, who will answer 3 questions. Mr. Čečil, I will read questions in an order they came. The first question is A13.

1.4.3. Description of the considered process, which is under administrative proceeding and related implementation

How can the start-up of Temelín NPP be delayed due to eventual law-suits ?

Name of questioner: Anonymous

Good afternoon. My name is Čečil and I work in Temelín NPP, I am in charge of contact with the building authorities, and on that occasion, also with our deadly friendly initiatives. This question is very interesting. I would probably answer this way – the bringing of legal action and judicial proceedings concerning the construction process have not any delaying effect at all. The whole process of legal actions concerning Temelín NPP started in 1997, after receiving permission to make certain changes in the auxiliary service building. I do not want to protract or explain the details, it was a case of replacement of bituminisation line processing glass active wastes, which was of Czech origin (Královopolské strojírný company, the line was under development) for the tested French bituminisation line, same technology, different product. There were other changes made - mixers were installed in the tanks and two additional tanks were installed. South-Bohemian Mothers were allowed to participate in this proceeding, proceeding on the change in the building, they used the situation and required assessment of effect of this change on the environment. The administrative authority asked the Ministry of the Environment, whether it is necessary to assess such a change and the Ministry of the Environment answered no. Then, the permission for change was issued, South-Bohemian Mothers filed an appeal and the appealing authority proceeded the same way, i.e. asked the Ministry of the Environment and its answer was no. The Act No. 244 does not apply to this change and no assessment has to be made. I think it was logical. Nevertheless, South-Bohemian Mothers lodged a complaint at the Supreme Court, they

indicted the Ministry for Local Development for issuing the decision on disapproving their appeal. And we made the only one mistake, partially due to ignorance, partially due to respectability, because we did not apply as a subsidiary participant to the case. The application was lodged in November 1997. The Supreme Court held the case in 1999 and decided that South-Bohemian Mothers are right, as the law stipulates that the assessment of effect on the environment also applies to the effect of changes in buildings and as Temelín NPP asked for a change in the building before its completion, change is change, everything is wrong, nothing is valid and we got into a situation, when the change had been already realised, but the decision on its permission was cancelled. We managed to handle this problem. We discussed the change according to the Act No. 244 and after long peripetia we received several days ago a positive decision on this change issued by the Ministry of the Environment. Another lawsuits made by South-Bohemian Mothers on the level of Regional Court, there were 7 of them lately, were all superseded by the resolution of the Regional Court. As far as we are informed, South-Bohemian Mothers referred to the Constitutional Court through Mr. Petr Kužvart, lawyer, we have already applied for being a subsidiary participant to a case, we were asked to provide standpoint and we have naturally provided it. I would like to add that the whole case of losing lawsuit at the Supreme Court is based on the fact that the Supreme Court decided absolutely formally and did not take into consideration that the acts contain terms, which in one act may have different meaning than in another one. I will try to briefly explain. Change in the building. Change in the building according to the Building law means e.g. that partition wall will be moved, that the store room is adapted to be an office room, i.e. there is something done in a different way than in the documentation, which was submitted for the building proceeding. I understand the change in the building according to the Act No. 244 differently. I proceed ...

.... Mr. Čečil, would you please hurry, there are another two questions ahead of us.

The answers to those two questions will be very short. The change in the building according to the Act No. 244 means something different, because I proceed with the effect of building on the surrounding area according to the Act No. 244 before I take part in the territorial proceeding. Let's imagine this absurd situation. I proceed with the development project, its influence on the surrounding area at the time I have a certain idea on the level of project task or even less - development project. I will receive a decision, on the basis of which I will receive a territorial decision, then I will prepare a construction project, which is more detailed. I continue in the building proceeding and receive a building decision. Then I will start constructing and move the partition wall. And as this is called a change in the building according to the Building Law, I have to ask again for the assessment of effect of the moved partition wall on the environment. I would like to say that it was also the Supreme Court, which stated in its resolution that the Act is not perfect, in fact, the court said that this act is bad. The Constitutional Court - we referred to the Constitutional Court - put us out as we were not the participants to the proceeding and therefore we could not be there. The Constitutional Court stated that it is a defect of Czech Legal Order, we have been urging this issue for a long time, but it is still the same. In conclusion one sentence to add. How this situation may influence the start-up? I think that at the moment there is not any effect on the start-up, but it may happen anything in this juristic state.

END OF SIDE 1 OF CASSETTE 2

2.6.2. Disposal of spent fuel

How will the spent fuel be disposed? Which locality is the most probable for the permanent disposal of spent fuel? State the quantity of spent fuel produced for the whole period of operation of ETE.

Name of questioner: Václav Svátek

...very brief answer. The spent fuel is replaced each year, about quarter of reactor charge. It is stored in the spent fuel pool located inside the containment, the inside of containment has a capacity of about 12 refuellings. Then, the fuel will be transported to the intermediate storage, it is difficult to talk about its locality now as it will be needed not earlier than in 12 year time. Dukovany power plant has its intermediate storage in its locality. The resolution of government – I do not remember its number – prefers the intermediate storage to be situated in the locality of Temelín, however, the territorial decision on situating the central intermediate storage, i.e. intermediate storage of spent fuel for Temelín and Dukovany power plants in Skalka, has been issued recently. So this is a matter of future, but it is not a problem. As for the permanent disposal of spent fuel, this is a matter, which is in charge of the state authority according to the Czech laws, and the state authority said yes, we want to follow the road of nuclear power engineering, when satisfying the energy needs and we will take care of disposal of spent fuel. The nuclear power plants financially contribute of each produced kilowatt-hour to cover future costs related to the disposal of spent fuel. I would like to add that the spent fuel may come to the end differently. It can be a material for reprocessing or used in the sub-critical reactors. It is a matter of future development. I think that most countries operating nuclear power plants consider such eventuality. As for the quantity of spent fuel produced for the whole period of operation of Temelín NPP, I want to apologise, but I do not know the exact figures, it should be in the order of thousands tons. It depends on how long the unit will be in operation. Today we have mentioned 50 – 60 years, it is our assumption, but of course, it depends on the behaviour of unit and how the unit will be safe as far as material or other factors. If required, we can provide you with more detailed information in writing. At the moment I am not able to provide exact figures.

And the last question – B13.

1.9.1.1. Consumption during construction and operation: energy sources

How much electric energy will be spent for the operation of Temelín NPP and from which sources will it be covered?

Name of questioner: anonymous

Each power plant spends some electric energy for its operation. This is called house consumption. The expected house consumption of nuclear units with a size of Temelín is 6-7% of the power of unit. It will be covered from the electric energy produced by generator located in Temelín and while this generator is out of operation, the energy will be supplied from the national or interconnected system, or external network as in case of any other power plant. If this will do, thank you.

Thank Mr. Čečil. Dear attendants, we have been discussing for 2 hours and 20 minutes. As a lot of questions have accumulated in front of me, I take the liberty to go on without a break as we have to finish at 16.00. Those, who need a break or have to smoke, do so during discussion, but please without disturbing. We are "cramming" sandwiches, which were prepared for us by organisers, do not be sorry about it. They were prepared for that purpose.

Now I would like to ask Mrs. Žáková to answer 3 questions concerning waters. I ask you for a maximum briefness, because I have another 10 particular questions and 6 unclassifiable

questions here. I am very glad that you take advantage to pester the present experts. I would start with question 2.2.1.3., it is B14.

I would ask Mrs. Kočková, who is a chemist to come to answer this question, please the next question.

So question A10.

2.2.2.2. Influence on the surface water

What is the influence of waste heat from cooling circuit on the Vltava river? Will the quantity of oxygen dissolved in water be reduced significantly and consequently limiting the self-cleaning ability of water ?

Name of questioner: Lukáš Němeček

Dear attendants, I am doctor Žáková from the private consultant company Biotest in Brno. A careful attention was paid to the effect of waste heat from cooling circuits within the study prepared by the Faculty of Sciences in Prague in co-operation with the Academy of Sciences in České Budějovice and also within the study prepared by the Research Institute of Water Economy in Prague, from which it follows that providing only two units of Temelín NPP are in operation, the temperature of water in the profile of the Vltava Kořensko will increase in average by 0.1 – 0.5°C. So the influence of Temelín NPP within the inter-yearly variability of meteorological conditions can be considered as negligible. Such influence may develop only under extreme conditions, during hot summers or extraordinary hot seasons. We have warned about the influence of waste heat on the increased eutrophication in the Orlík reservoir, which is currently very strong and this would have an influence on the quantity of oxygen dissolved in water secondarily and the self-cleaning ability will not be limited. Question number 2.2.3.2. is relating to this issue.

2.2.3.2. Effects on ecology of surface water and groundwater as a result of pollution, changes in drains, etc.

How will the discharge of waste water influence the content of BOD and COD. I am interested in the effect on the growth of micro-flora and micro-fauna (algae, cyanobacteria, etc.). Will the health of population be effected ?

Name of questioner: Anonymous

How will the discharge of waste water influence the content of BOD and COD, what is the influence on the growth of micro-flora and micro-fauna, effect on algae, cyanobacteria and effect on the health of population? The main problem is the increased eutrophication in the Orlík reservoir and secondary problems connected with eutrophication of water and processes of influencing the chemical status of water. I would like to ask Mrs. Kočková, who is a chemist to answer the first question. If anybody needs more detailed explanation I have some studies with me, I can provide you with more information.

2.2.1.3. Emissions in the water environment (normal operation)

Extent of contamination of water caused by operation of ETE, eventual corrective measures.

Name of questioner: anonymous

Ladies and Gentlemen, I would try to answer this question. Emissions in the water environment, normal operation, extent of contamination of water caused by ETE (Temelín NPP) programme, eventual corrective measures. I would like to compare the situation in the Temelín Nuclear Power Plant with NPP in Dukovany. I want to do it because conditions in both power plants are little bit different from the water management point of view. You are familiar with situation in Temelín – I do not want to repeat it, but I am not sure whether all of

you are familiar with the water management, or better said locality of Nuclear Power Plant in Dukovany. There are two reservoirs there – Velešice - upper reservoir, with a capacity of about 127 million cubic meters and lower reservoir – Mohelenská with a capacity of 17 million cubic meters. The pumping hydroelectric power plant with a top operation is situated between these two reservoirs. Water from NPP Dukovany is being returned to Mohelenská reservoir through Skryjský brook. Water from this reservoir is pumped and returned into the profile located at a distance of about 70 meters from the pumping station. The temperature of water returned from NPP Dukovany was always about 10-12°C higher than the supplied water. So it is a great difference. Later, after the accumulating retention area was built, the temperature of water is slightly reduced. The temperature of returned water now is not by 10°C higher, but usually lower. Of course, in order to document the effect of heated water and effect of returned thickened and concentrated waters, it was necessary to make a lot of measurements, I will not speak about it now. In spite the rehabilitation flow under the Mohelno reservoir is only 0.78 cubic meters, i.e. very small, the quality of water there is influenced only by mineral substances, which slowly penetrate in milligram concentrations per year and the temperature of water less than 1°C per year. Now I would compare it with situation at Temelín NPP.

Please very briefly, there are a lot of other questions.

Conditions in Temelín NPP are little bit different, but more favourable for Temelín, because the flow in the Vltava river under the Temelín inlet pipe is more than 6 cubic meters and at the confluence with the Lužnice river it will be almost 10 cubic meters, then followed by other three big reservoirs. So the danger of heating or any mineral pollution is not so serious in Temelín case and it is eliminated by dilution.

Thank to Mrs. Kočková and now I would ask Mr. Hanzlíček to answer two unclassifiable questions. One of them is important, the second one is quite funny. Would you please start with the funny one.

Unclassifiable

In the TV discussion "Naostro" Mr. Fagan asked several times, why the ČEZ representatives or ministers were not present. Why has Mr. Fagan not taken part in today's discussion ?

Name of questioner: anonymous

I would comment that with two sentences as I was a participant of that TV discussion. Mr. Fagan is a private person. It was said in the TV discussion, whether Mr. Fagan was aware of the fact that the documents he got from the Austrian initiatives were not OK and he was advised to verify them. I hope that this answer explained all.

Unclassifiable

What conclusions will follow from today's discussion and how will the assessment prepared by Commission be used in practice in the future?

Will it be possible to say that the participation of the Czech party on this discussions means fulfilment of the relevant part of agreement of prime ministers in Melk?

Name of questioner: anonymous

Second, more serious question: What conclusions will follow from today's discussion? Today's discussion will be used as a basis to prepare a standpoint of Commission for the Melk's signatories. Mr. Martiš will answer the second question.

All the questions that have been asked or will be asked today and all responses are being recorded and they will form a part of settlement of comments of the public to the presented Assessment. So, we are obliged to cope with the questions you have asked and will ask today and also with those, which we will receive in a written form through the secretariat of Commission by 10th May. We assume that material will be edited, corrected, it is really required from the technical point of view, but we do not assume that any radical changes will be required. I think that I can speak on behalf of the whole Commission, on behalf of four experts. Then, we will settle and satisfy all the comments of professionals and non-professionals and prepare a final standpoint for the prime minister for the negotiation between the prime ministers of the Czech Republic and Austria, then the whole task assigned to our Commission by the resolution of the Government will be fulfilled.

Thank you. And now I would ask Mr. Prouza.

2.1.1.6. Monitoring radionuclides emitted into the atmosphere

How are radionuclides emitted into the atmosphere monitored and how is the public informed about this?

Name of questioner: Anonymous

Thank you for this question because it allows me to briefly describe the system, which ranks among the top systems in the Czech Republic. I would like to begin with a bit of legislation. The monitoring system, which concerns the Temelín Nuclear Power Plant, consists of two parts. The first part is ensured by the power Plant itself, the second by the state. How is that part ensured by the power Plant enforced? In the licensing process, one of the most serious documents, which our office approves, is the so-called monitoring programme, which consists of 4 parts: personal monitoring, workplace monitoring, emission monitoring and monitoring of the environs of the nuclear power Plant. During the course of this licence process, we consider the methodology used for this monitoring, the techniques used to conduct this monitoring. So-called reference levels are determined there; this means levels from which the control is conducted indicating that the situation has gone beyond the normal value, i.e. the so-called investigation or intervention levels, which would lead to the realisation of intervention by the power Plant. This system concerns not only the atmosphere; it also concerns water and the environs. The power plant also conducts control of food chains, measures radionuclides in samples taken from the environment and components of the food chains in selected places approved by us. In view of this, highly sophisticated systems are placed in chimneys from integral meters through to spectrometric meters, and the flow rate of chimneys is measured. The entire system is technically highly demanding. If somebody has asked who deals with these problems, I can certainly provide you with more detailed information about this from the nuclear power Plant or from the office. As far as a national monitoring system is concerned, then the government resolution of 1987 established the so-called – I apologise for using these English terms, these were presented at this “workshop“, at which there was talk of – the sophisticated radiation monitoring network, which is coordinated by the law since 1997 by our office and consists of several components to which several departments contribute – above all the nuclear power Plants, both Dukovany and Temelín, the Czech Meteorological Institute, our budgetary and supporting organisation – the State Radiation Protection Institute, sections of the Czech Army and sections of the radiation monitoring network represented by important institutes such as the Academy of Sciences and universities. I will not describe in detail the structure and tasks of this network. I will only

very briefly present several charts here of how the network is distributed throughout the territory of the country.

The first chart is the so-called prompt provision network. These are constant measuring systems, which measure the level of the doses of power demand on the country's territory. You can see that they are equally distributed. Our office, the Czech Meteorological Institute and two radiation control laboratories in the environs of nuclear power Plants contribute to this network. Then these networks in the central computer of our office are constantly monitored and you can see their results on the Internet pages of our office and the Internet pages of the Radiation Protection State Institute. The second very important component of this network is the thermo-luminescence dosimeters network, which is densely distributed throughout the country. This network, under a normal situation, works in a three-monthly regime. So our regional centres collect and hang up new thermoluminescence dosimeters. In the event that there is an increase in the level of radioactivity in the atmosphere, then measurements, the collection and distribution of dosimeters would be made in shorter intervals. The third, very important component, is the radiation monitoring network laboratories at our regional centres and laboratories in the environs. These laboratories are equipped with the latest spectrometric methodology with respect to the instruments and the sensitivity of measurement, and this equipment is capable of determining the contents of radionuclides in any component taken from the environment or component from food chains. A national monitoring programme for a normal situation is approved which involves the collection of selected components and their measurement and assessment.

I would still, out of interest, like to show you the techniques used to control this network. This is an air shot taken from the monitoring of sedimentation basins at Mydlovary, so you can get some idea of what possibilities exist if any suspicion arises that the level of radionuclides has increased. Then very quick monitoring can take place. Apart from this, our regional centres are equipped with mobile groups using mobile technology, which is also capable of very quickly diagnosing a situation wherever in our country.

Now for the second part of this question. Where can you find these results? Each year our office issues a report about its activities in which one chapter is devoted to the results of the radiation monitoring network and the Radiation Protection State Office annually issues a highly extensive publication, which describes in detail where measurements are carried out what is measured and what are the results. If this should interest you, we are prepared to describe in detail the results, and function and activity of this network.

Just out of interest – yesterday I and the chairwoman attended the a session of the state security council, which decided that this activity will continue to receive financial support and the Nuclear Safety State Institute will continue to be responsible for this support. Thank you for your attention.

Thank you Mr Prouza. Allow me to tackle one of the answers.

2.6.2.2. Storage of spent fuel

What locality was selected for the final storage of nuclear waste?

Name of questioner: Anonymous

The storage of spent fuel and what locality has been selected for the final storage of nuclear waste? If I comprehend spent fuel as meaning nuclear waste, the a locality has not been

selected and is not being planned until about 2025-2030, Mr Čečil talked about this just now. If nuclear waste means radioactive, low and medium active waste, this is stored at radioactive waste site at the Dukovany Nuclear Power Plant, which serves both the Dukovany and Temelín Nuclear Power Plant. See further – A24.

2.6.2. Storage of spent fuel

It is being considered partially reprocessing nuclear fuel and using it again (see France)?

Name of questioner: Anonymous

As far as I know, it is not being considered reprocessing spent fuel in France or England or in the former Soviet Union. Now I would like to ask Mr Coufal to deal with question B9.

Before Mr Coufal comes to the speaker's counter, I would like to remind you that I have already dealt with this question in my introduction and in view of the fact that Mr Coufal is a prominent meteorologist, then he will certainly be able to provide highly specific additional information.

2.1. Atmosphere and climate

How far from Temelín will its operation affect the meteorological parameters? (Increase in temperature, fog, frost,...)

Name of questioner: Anonymous

First of all I would like to thank Mr Hanzlíček for the praise. I would like to answer very briefly because I have already provided a standard answer. The impact of full operation activity from both blocks barely reach an area of within 5 km, and this alternates, depending on the weather at the time in this area. This means that the effects of this nuclear power Plant may go west and another time south, a third time east and a fourth there may be none at all. These effects do really depend on the state of the weather. This means weather where there is strong advection, meaning that either there is a cold or warm flow of air, then the effects are virtually nonexistent, while in weather of an anticipated kind, i.e. when there is high pressure, then the effects are far greater, of course "greater" must be understood from the relative sense of the word. As far a temperature is concerned, then an increase in temperature does not occur at a distance of beyond 5 km. As far as fog is concerned – a very interesting situation occurs here that the individual effects of the nuclear power Plant are mutually compensated. There is the greater quantity of water released into the atmosphere from the cooling towers, on the other hand air in the area of the nuclear power Plant is heated. Which means that if fog appears only then when air humidity is greater than the quantity of humidity, which in the given temperature is such air that is capable of containing it, so it is only then the fog appears. In such a situation – heating on one side and addition of water from the atmosphere in the form of these tiny drops and water vapour from the cooling towers on the other leads basically, in most cases, to mutual compensation or at least to the mutual decrease in these effects, so the frequency of the occurrence of fog in a given environment will not be too great as opposed to the current situation. And the last thing is frost. Frost, this is a solid deposit, which arises at a temperature of about zero under typical advective situations. I have already said that the effect of a nuclear power Plant is minimised because the quantity of air, which comes from a northern latitude though the operation of the nuclear power plant, is so great that the nuclear power plant's operation will virtually not affect it. Only one thing remains

and this, in my opinion, being a highly logical conclusion, that the nuclear power plant cannot not have an effect on the occurrence of frost. Thank you for your attention.

I only wish to add that Dr. Evžen Quitt of Brno cooperated in a great way to this chapter.

And now I would like to ask Mr Krs. I am trying to bring together questions that are alike and get one person to answer both. So this is A25. This is the question of containment.

1.7.5. Containment

According to Prof. Hirsch the structure of the containment is bad and inadequate. Could you please express an opinion concerning this?

Name of questioner: Anonymous

So the question, according to Professor Hirsch is that the structure of the containment is bad and inadequate. I must admit that I do not know which information Professor Hirsch used to make this statement, nevertheless the containment of the Temelín nuclear power plant was tested by our office using two parameters. The first of these was the strength of the entire structure of the containment. This parameter was found to meet the requirements, which are placed on this structure. These requirements are comparable with the requirements of this structure in developed countries and the countries of Western Europe. This parameter was also tested in a project carried out by the SÚJB with the professional organisation of GRS from Germany. The project was called “Consideration of 7 important security issues concerning the Temelín Nuclear Power Plant“ and the conclusion of the German experts for the GRS company was that as far as the strength of the box and structure of the containment, the protective cover of the Temelín Nuclear Power Plant is concerned, it complies with the current requirements and they had no criticisms to make about this situation.

As for the second parameter test – of the protective covers of the water-pressure reactors, this being the tightness, the requirements for tightness of the containment in the Czech Republic are very high, they are higher than for the usual structure in Western Europe and both the protective covers of block 1 and 2 have passed the tests, which have already shown that these very high requirements for the tightness of the entire structure were fulfilled by the protection even with an adequate time reserve. It is possible that Professor Hirsch bases his argument on one often mentioned containment parameter of VVER 1000 water pressure reactors, and that is that the bottom of the containment is found above the surface of the Earth. We had devoted in very great detail as part of the process under Chapter IV. The Accord reached at Melk during today’s mentioned seminar on the subject of serious accident, which was held at the beginning of April in Prague in our office. During this seminar results were presented of highly detailed analyses of serious accidents whose consequences could lead to the disturbance of the integrity of the entire protective cover and obviously also the effect was also examined of the fact that the bottom of the containment is above the surface of the ground. And these analyses clearly show that no different behaviour should occur of the entire equipment as opposed to the same structures in the world. In other words, the fact that the bottom of the containment is not sunk into the ground should not play a role in these cases. Nevertheless today corrective measures are known and possible today, so that any possible negative effects may be prevented or avoided.

And the second question – it is being projected now.

1.6. A short description of the technical and technological equipment

One of the objections raised by Prof. Hirsch is the so-called “fragility“ of the reactor vessel. I would like an opinion of this question.

Name of questioner: Anonymous

This second question also comes from Professor Hirsch. It concerns the so-called “fragility“ of the reactor vessel. The studies on the VVER type water-pressure reactors which took place at the beginning of the 1990s concerning the structure of these water-pressure reactors showed the possibility of a negative effect of the neutron flow on the reactor vessel, which could cause so-called fragility, which would mean a threat to the integrity of the reactor’s pressure vessel. Here it is necessary to mention that Temelín differs greatly from the similar VVER type reactors constructed in Russia, Ukraine and Bulgaria particularly because a different manufacturer constructed its vessel. The manufacturer of this vessel was Škoda Plzeň and the quality of production and material is altogether different, i.e. that the material of the vessel behaves and will behave differently during operation than the reactors and pressure vessels constructed by the manufacturer in the former Soviet Union, which is very important for assessing this factor. The second thing is that the manufacturer in cooperation with the Nuclear Research Institute in Řež planned and activated the highly sophisticated programme of witness samples, when the samples of used materials are taken directly to the zone and with the aid of the behaviour of these samples it is possible to monitor the draw on the service life of this vessel, the behaviour of this vessel’s material under a long-term burden, and so it is possible, in the course of the service life of the entire power plant, to monitor in what manner the material of the vessel deteriorates. This means that the power plant operators will have at their disposal very detailed information on the situation concerning the vessel during the entire operation. These are two very important parameters, which were again examined in the already mentioned SÚJB and GRS Project, which took place, the so-called “Assessment of 7 Security Issues “ and again with the ...

...could I again ask you to be brief sir ...

... in the final sentence. In the programme of witness samples our experts and GRS experts stated that this concerns a highly quality and sophisticated system, that has no counterpart even in most similar facilities in developed countries.

Thank you Ladies and Gentlemen. Do not be surprised that we are trying to get our speakers to be brief in their answers because so far I have 8 specific questions, 8 not included questions, which are also very interesting, and I would be happy if the Commission were to come away with the minimum of unanswered questions. So maybe you think that I keep interrupting them, but I do not want you not to hear the answers to the question that you ask. And now you will hear the answer given by Dr Martiš to two questions.

Unclassifiable

Is there a real possibility of being able to utilize some alternative source of energy, which could at least partly replace Temelín?

Name of questioner: Anonymous

From the documents available to us now and which do not have to be current, it appears that the total replacement of these 2000 megawatts for an alternative source of energy, and now I am not thinking of an alternative source for fuel, but by an alternative source of power such as solar energy, geothermal energy or wind power, as a total replacement, is not realistic under the present economic conditions. It is true that such a detailed study has not yet been carried out in this country and that this would have to be examined from the point of view of the

effect on the environment as well as the distribution of solar equipment and a network of wind power plants. And it is from these documents that we have obtained from a study in Seven, where these problems are being dealt with, that the details show that a possible replacement, even in the most optimistic scenario fluctuates at about several tens of a percent; decidedly not anywhere above half the rate of the output at Temelín.

So the next question – A26.

2.4.2.2. Effects on human health

Has the bacteriological effect been examined on the population with the emission of vapour from the cooling towers?

Name of questioner: Anonymous

There are two answers. I do not know if any studies have been carried out, I will have to ask. The general opinion of the State Health Institute is that the effects of the operation of the Temelín Nuclear Power Plant on communal hygiene is negligible and if experts from the State Health Institute have more extensive references at their disposal, then they will be able to provide a more detailed answer to this question and we will use their answer to answer all other questions. Thank you.

Dr. Hanzlíček has asked me to get the chance to add something to Dr. Martiš's answer about non-traditional sources of energy.

Just to give you some idea – half the output of the Temelín Nuclear Power Plant would have to be replaced by five thousand wind power plants and the planting of fast-growing plants or the use of the geomass of an area equal to more than 3% of our country.

The next question, which is directed to Mr Kříž, but allow me, because this concerns the same question repeated in various forms for the third time and I am convinced that Mr Kříž has already answered it, then I will not call Mr Kříž to answer it.

I only wish to let the submitter of the question that the question has been registered.

1.8.2. The list of states which would be potentially affected by any accident

Has a programme of cooperation been prepared with other states in case a crisis situation or accident were to have to be resolved? Which states would contribute to solving an accident?

Name of questioner: anonymous

I would now like to ask Mr Klumpar.

2.1.1. The atmosphere

How many pollutants will Temelín emit into the atmosphere a day in comparison with a thermal power plant of the same output?

Name of questioner: Karel Miesbauer

Hello. My name is Klumpar and I am from Energoprojekt Praha. I have received a highly specific question, which would deserve a specific answer. Unfortunately I must begin by apologising that I cannot give a totally specific answer in view of access to information and time. At least I can state some general points on this subject. If we were to compare the emission of pollutants, then in the case of the nuclear power plant, this concerns the dominant effect of radionuclides. There are obviously radionuclides present even in the classic type of power plants, but there are also a whole series of other factors, so it is quite difficult to find a

common criterion to make the comparison. So I will return to the question of how many pollutants are emitted into the atmosphere by Temelín. We will only know the precise figure after the power plant is put into operation and read this, just as today we may read in the annual reports about how much Dukovany emits. So we will be able to read how many pollutants Temelín will be emit. This data have been published today, it has been published in the pre-operation security report and in the EIA documents that Mr Mynář has already mentioned. It is based on highly conservative and pessimistic forecasts, basically from calculations of volume activities in the primary medium and then in the transmission of these activities into the atmosphere. This balance is not conducted on a daily basis, but for various operating regimes for a whole year, but of course this conversion per day would be very simple. This data shows the quantity of emissions in these documents basically in two forms. One is the inventory of radionuclides in Becquerel units per year for individual nuclides, which is of no great informative value regarding the effects on the environment and population. So the second Sievert unit is also used here per year into the load of effective dosage critical for the inhabitants, and this unit is of a slightly better informative value. This includes all the ways of irradiation, i.e. not only what man inhales, what affects him from outside such as external irradiation, but also what he consumes with food contaminated by some fallout. This data are then restricted by a limit, which is lower than the maximum admissible irradiation of the population under the Radiation Protection Decree. It may be stated that based on the experience of operation from say that at Dukovany, it may be expected that the real values will again be lower than those pessimistic estimates.

Mr Klumpar, could you be more brief please. I have to interrupt you just as the others.

Alright. I apologise. This is a rather complicated question. As far as emissions from classic power plants are concerned, then the content of radionuclides depends, of course, on the type of burnt coal and on the technological process, particularly on the cleaning of combustion products. This data is also published in this country and again I cannot quote it, but in the case of classic power plants, it may be stated that the effect of pollutants is more substantial, but then again it perhaps depends on

END OF SIDE 2 OF CASSETTE 2

All right. Thank you, that will do for now. There have been comments made to the previous question 2.4.2.2. – as to whether the bacteriological effect on the population has been studied. I would like to ask Professor Kotulán from Brno for some additional information in brief. And then I would like to ask Director Hezoučký to answer two questions.

Ladies and gentlemen, this question was evidently motivated by a certain fear that the increase in humidity in the atmosphere could result in an increase in the number of bacteria, and this would thereby affect the health of the population. I would like to state that the microbes that are found in the free atmosphere, in the countryside, in the open air, these are not disease breeders. These are natural microbes, which have no effect on health. Disease-breeding germs, which may cause disease, are capable of living normally only in a sick human or animal body, and can only live for a very short space of time outside it. So infection can only occur in places where there is direct contact, such as from a cough and so on, but not from the free atmosphere. This could only occur when two people are talking next to one another. So any fear of what happens to bacteria in the free atmosphere, and how these could affect health is altogether unjustifiable. Thank you.

So now I would like to ask Director Hezoučký to answer question no. B16.
What are the construction costs?

And then I would like to ask you two further questions that I have not yet received.

1.5. Total capital costs

What are the total capital costs of Temelín?

Name of questioner: anonymous

You may, but I have not yet seen them. As far as investment costs are concerned, 89.5 billion crowns were invested by the end of last year, just under 9.5 billion crowns remain for this and next year. We expect to maintain these costs by the measures we are undertaking with regard to the contractor and the regulation of costs.

(Next question) I think that you answer these question so often that ...

1. Basic data on Temelín

What are the critical components of Temelín, how capable is the power plant of operating if any of these are damaged?

Name of questioner: Miklós Csémy

...the critical components. It is such a well known term, but so critical with regard to operation and the capabilities of the power plant. There are several including the turbines that are still causing us some trouble and, from the security point of view the primary circuit, reactor, main circulation pump, as well as the security systems. Which are secured three times over in case of the failure of these security components.

2.7.3. Accident Plans

What is the evacuation plan for the inhabitants of České Budějovice?

How will use compensate any victims? (I am only 22 km from the epicentre).

Name of the questioner: Jiří Tichý

There is no evacuation plan for the inhabitants of České Budějovice, because it is unnecessary. This is true because České Budějovice is located beyond the accident-planning zone. How will you compensate any victims? I am only 22 km from the epicentre. There will be no epicentre. The epicentre is used in case there is an actual explosion, Temelín cannot explode. Have you any other questions?

Not at the moment. I would like to ask Mr Čechil.

1.4.5. Decommissioning and dismantling

What is the proposed procedure for the liquidation of Temelín after it ends operation and its estimated cost?

Name of questioner: Ota Fišera

I will be very brief. Our legislation requires – I am now thinking of the legislation set forth in the Atomic Act – so that we can, as one of the documents for a request to the gradual putting into operation of the nuclear equipment, be able also to submit a study for the final liquidation

of the power plant. This study has 2 purposes. One is to show the technical possibility and feasibility under the already known technology of how to carry out such liquidation. The second is the cost of such liquidation. All this for the reason that a sum is prescribed as to how much the power plant has to place in the reserve fund in which it collects funds for such liquidation. We have, of course, carried out such a study and have carried it out using several variants, i.e. from abandoning the power plant to its liquidation based on the original green field. I apologise for not being able to quote a price. I cannot remember it, but I can provide you with additional information regarding the price in writing. I would also like to say one more thing. Show me different technology, a different sphere of human activity and a different product, which by law, includes in its price the price of liquidating its production means from which it is produced. This is not merely a specific matter, a peculiarity in this area for nuclear power plants, but it is more. I would just like to make an insert into the accident plan and České Budějovice evacuation plan. I think that the České Budějovice evacuation plan will be prepared for other reasons than the reasons based on the nuclear power plant. As far as I know, there is a winter stadium in the centre of České Budějovice. There will not be much ammonia there. And can you imagine what could happen if it were to be released, as did occur recently, but I cannot remember where in the country. These plans will be prepared. They will be prepared on the basis of Act 353 of 1999 et seq. They are based on practice in using nuclear energy and I think that it is in order and that the measures we undertake today on the grounds of the Atomic Act and preparations in case of a nuclear accident, will also be undertaken for further accidents that are no less dangerous, but the probability of their occurrence is much more frequent. Thank you.

Now I would like to ask Dr Hanzlíček.

Unclassifiable

The task of the commission will end with the submission of a viewpoint to the government Premier. However Austria has so far rejected to convene a public hearing in Linz. Could these political delays in the realisation of the Melk Accord threaten the further procedure in putting Temelín into operation.?

Name of questioner: anonymous

Austrian activists' comments regarding the Melk Accord are that if an ecological and security audit are not carried out, then the power plant shall not be put into commercial use. Commercial operation under our interpretation is the period of the building approval of Temelín's first and second block. The tests carried out currently and any further trial operations may not be considered commercial operation. This a theoretical matter which will have to be clarified.

I would also ask Mrs Fechtnerová to deal with the issues concerning water. This is question 2.2.2.2.

2.2.2.2. Effected surface waters

Does the released waters cause changes in the characteristics of the recipient, particularly temperature and pH?

Name of questioner: Anonymous

This next question concerns the effect on surface waters. Does the released waters cause changes in the characteristics of the recipient, particularly temperature and pH? Government Order 82 of 1999 determines the pollution indicator in a river, which, if exceeded, then the self-cleansing ability of a river is not changed and thereby the biocoenosis is not disturbed.

Waste waters released from Temelín will not cause changes in the characteristics, when I comment on the organic pollution, then there is a change in the most favourable river flow, i.e. 9.5 cubics, there is a change of 0.2 milligrams per litre for BSK5 and for CHSK it is 0.5 milligrams per litre. In an average flow that is 50 cubics in the Kořensko profile, then the value is five times lower. In the water value, as stated by Dr. Žáková, the effect ranges from 0.1 to 0.5°C, when the highest effect is in those coldest seasons - i.e. January and February, and then there is also November and December. The lowest effect, i.e. about 0.1°C and lower during the least favourable flow in the warmest months, i.e. in summer. I can say again that the effect is even lower during the average flow. I would also like to add to this question: this does not concern a higher eutrophication of the Orlick Reservoir. This problem was examined in great detail and has been examined for several years, and the result of this research is that currently there is such an influx of phosphorus into the Orlick Reservoir that is totally negligible with regard to the effects of water temperature in the River Vltava. Firstly the influx of phosphorus from the river basin to the Orlick Reservoir must be decreased. pH – here I only wish to add that the pH values may range in the river between 6 – 8.5, for the River Vltava the value is more acidic, and we have a limit of 6.5 – 9, i.e. that after the mixture of waters in the river, there will be no pH effect in the river. That is all. Thank you.

I would like to ask Professor Říha to deal with question A29.

2.3.2.3. Soil conditions (contamination, compaction, erosion etc.)

Does soil pollution occur (under routine operation or in the case of an accident) and how is it monitored?

Name of questioner: Anonymous

I would like to answer briefly. A distinction has to be made between what happens within the fenced off site of the power plant, within close proximity of it and great distances. I am basically answering the question as to how soil is monitored. Soil, soil conditions and contamination form part of the central monitoring system. As far as contamination under routine operation is concerned, we can distinguish non-active and radioactive pollution. As far as non-active pollution is concerned, there is no record, this concerns more a certain risk, which depends perhaps on the leak in oil products, building activity and so on, which can be recognised very quickly on the leakage of surface waters. So nothing has occurred in this respect. As far as the routine operation of radioactive waste is concerned, then it is not expected that pollution will occur here. Because the entire matter is highly sensitive, then part of our examination is a certain recommendation in this respect, that a soil map of the area around the power plant be prepared in digital form and be systematically monitored to provide a spatial generalisation of the effect on the soil. That is all.

Thank you Professor Říha. I would like to ask Mr Prouza to answer the question of environmental monitoring.

2.4.7. Monitoring the Environment

In what manner is the functionality of the radiation-monitoring network secured (can this fail and what would be the consequences of such failure)?

Name of questioner: Pavla Hejnová

Thank you Miss Hejnová for your question. It is very interesting. As every system so radiation monitoring network systems are not fully secured against failure. I will start at the end, i.e. consider the consequences. Both the power plant and the office are trying to minimise the consequences of failure. And how is this ensured? Mr Klumpar has already mentioned

here that one of the further monitoring blocks, which I have not yet talked about in detail, are the so-called limits and conditions, which are also approved by the office. The limit conditions describe the systems and conditions for the operation of these systems, which are designed for measuring and assessing these serious quantities from the point of view of nuclear safety and radiation protection. There are also systems, which carry out the monitoring of emissions into the surrounding area, the atmosphere and water. A document for each system on which a balance measurement is carried out regarding emissions into the atmosphere and the surrounding area contains a Standby Measurements system. So the power plant knows that as soon as failure results in any of the systems, on which balance measurement is based, then the standby measurement is immediately activated. This concerns that part of the system concerning the power plant itself. As far as the radiation monitoring network systems throughout the country are concerned, then you are probably thinking of that network of prompt provision. So if this failure were to occur there – and these are places under constant control – because this is a minority, then testing is carried out immediately to discover where the error is. If this point were to really fail, then because, and as I have already said, we have service ensured both at these meteorological plants and at our regional centres, the standby measurement immediately comes into operation, not in on-line mode, but off-line and the transmission is used of the results of standard means from this measuring point by fax to this centre. So we do anticipate possible failure, but this is very strictly and precisely treated. Thank you.

Thank you Mr Prouza. I now have three last questions, which correspond to the “scoping list“, with which you were made acquainted at the start. Then we will look at the questions that it was not possible to include in this list. So at the end three questions. I ask Dr. Hanzlíček.

2.1.1. The Atmosphere

How does the nuclear power plant contribute to the decrease in pollutants in the atmosphere, which it has undertaken to do for the CR?

Name of questioner: Josef Novák

The questioner is thinking of the Kyoto Report. I can only state here that the combination of the Temelín and Dukovany Nuclear Power Plants will decrease the total emission of greenhouse gases in the Czech Republic by 17%.

Thank you and now I would like to ask Mr Čečil. Mr Čečil I will ask you to deal with the question that have not been included, at least most of them.

2.1.1. The Atmosphere

How much oxygen does a nuclear reactor consume for the production of electricity in comparison with a steam or has boiler?

Name of questioner: Josef Novák

I must apologise for not answering this straightaway, but perhaps my colleagues will be able to come up with a figure that they are trying to calculate. Nevertheless as I know, I think that a nuclear reactor does not require oxygen for its function. With the exception of what the service inhales. This is the case elsewhere too. The attempt concerns a power plant run on fossil fuels and on the biomass as well. And I think that this will come in millions of tonnes, which could be consumed by a power plant the size of Temelín, if it were to burn coal.

There is another related question now. And Mr Tyc will want to add something to this. A18.

Unclassifiable

Compare a thermal power plant with a nuclear one from the point of view of oxygen consumption.

32 oxygen weight units are consumed for the burning of 12 coal weight units. A coal powered plant produces at dumping prices because it does not pay a second component required for thermal reaction.

Name of questioner: Jan Fechtner

Yes. It is true in weight units on a sort of molecular scale. As far as dumping prices are concerned, then I am not fully certain. I do not pay what I breathe unless the Finance Minister includes this in some taxes, but I definitely think that all other production is basically at dumping prices. Just look how many reconstructions are taking place around you of old burdens – be they ecological or other – how many derelict buildings you see around you. Someone ought to pay for their demolition and I think that the cost for their demolition should be included in the cost of the product that they once produced. And does not only applies to nuclear energy. We save up for this first and then the law lays this down. So a certain amount of dumping generally occurs here. At least in my opinion.

Thank you. Mr Čečil wants to add to what Mr Tyc has said regarding this question, or perhaps to the previous one. In any case the consumption of oxygen.

I would like to answer the previous question: how much oxygen does a nuclear power plant consume? It can be stated that none. Not even the production of carbon dioxide. But this is not a really accurate question because as anti-nuclear activists state in the end, this must include not only the operation of the power plant, but the first ground digging work which requires a bulldozer or something that consumes diesel right up to the liquidation of the power plant plus the fuel cycle. So it is not true that the power plant does not produce any CO₂ and “not devour “ oxygen, but when we put all this together, then nuclear energy comes off well from this. For one gigawatt hour a nuclear power plant produces about 20-29 tonnes of CO₂. For a coal power plant it is 1000 tonnes, a thermal power plant burns gas – this is 500 tonnes. And what is interesting here is the comparison of a nuclear power plant with a solar power plant – i.e. a collector with direct transformation of solar energy into electricity – because there too collectors have to be produced in some way and we make sure that for one produced gigawatt hour of a solar power plant, the production of CO₂ is ten times more than in a nuclear one. That is an interesting conclusion. Thank you.

Do not leave yet. One question is directed at you. Mr Jiří Tichý is asking you question A35. You must be bale to answer it “from the top of the head” and you do not need to read it beforehand. “I ask for your opinion “, writes the questioner, Jiří Tichý.

Unclassifiable

The argument that the power plant is safe – according to “Father“ Jiří Tyc in the TV programme Naostro: “I have been here for 13 years now and nothing has happened to me “, is silly. Moreover he is paid from our money, we the people, will have to bear the cost for any damage. I ask for your opinion.

Name of questioner: Jiří Tichý

Yes, I can answer that. I wish to greet Mr Tichý. Are you paid from our money? Yes I am paid from the money of people who buy electricity. He who buys electricity creates profit for ČEZ and it is from the profit of ČEZ that I get paid. And as far as safety is concerned, I did

that I have been thirteen – i.e. fourteen – years at Temelín, I believe in this power plant and I could not react well to everything in the “Naostro” programme. But I live here with three children and if I were not to believe in this power plant, then I would not be here and would move elsewhere. No money from a wage is worth risking your own health and that of your children. And I believe in this power plant, I know its equipment, I have worked at Dukovany Power Plant and therefore I can confirm this. I could also confirm this to Mr Fagan who claims that we are assembling another Chernobyl facility and he has not yet seen the power plant and is ready to talk such nonsense. I do not know if this is sufficient for Mr Tichý.

Thank you Mr Tyc. And now I would like to ask Mr Čečil to answer 2 questions. This next question will relate to this. Perhaps it would be useful to read out both and then you can answer them together.

Something more about CO₂ and oxygen.

My name is Dlouhý, I am from the mechanical engineering faculty and I know that about 1 cubic m³ is required for 1 kg of coal consumption, i.e. if I were to consider that 1 tonne of coal is needed to produce 1 megawatt of electricity, then with 7000 hours of the annual use of a power plant would result in about 7x10⁹ cubics annually – the consumption of a fossil fuel power plant. That is all. Thank you.

Thank you. I would now like to ask Mr Čečil to answer these 2 related questions – a terrorist attack and the measures taken against this, failure of the human factor, intentional sabotage.

Unclassifiable

Has the possibility of a terrorist attack been considered? What measures have been adopted against it?

Name of questioner: Anonymous

Unclassifiable

How is Temelín protected against failure of the human factor and intentional sabotage?

Name of questioner: anonymous

The Temelín Nuclear Power Plant, as every nuclear energy facility, has good physical protection, this means that it is protected against external attack. The details of this protection are obviously concealed from the public. But internationally recognised methods, complicated tests and complicated calculations are verified, and I would say that what can be seen from outside, i.e. the fencing, some technical equipment from a distance, is not everything that is protected. Of course, circumstances exist against which it is not protected, just as nothing else. For example, military conflict is not included. But as far as terrorist attack is concerned, if this concerns sabotage, then the power plant is protected and I am convinced that Temelín is protected as very few other power plants in the world. It is said that it is the last power plant to go into operation and understandably the next will be better. That is about everything for this question.

So this is all. I am afraid that I will have to ask you for the next round. But I would now like to ask Mrs Drábová to answer the next not included question.

Unclassifiable

Who filed a postponed action against Mrs Dana Drábová? Apparently it is said that this was done by employees of Temelín.

Name of questioner: Kristýna Somrová

This is a really interesting question. As far as the putting into operation of Temelín Nuclear Power Plant is concerned, then more than one action was filed at once. I personally know that one was addressed to me and all the others to an unknown perpetrator. I do not know their further fate. I do not even know if the one action made against me was deferred. I have had no news about this. I know who made them. Mr Beck, who brought an action against me for general danger and I think that his reason was the only one. And that is that his attempt to enforce his technology for solving certain technical issues at Temelín Nuclear Power Plant did not stop even before submitting an action. I think that it was formulated in such a way that it was postponed. But as I say, I have no information about this. As far as postponed actions are concerned, then I only know of one concerning Temelín Nuclear Power Plant. It was an action brought by Greenpeace also due to general danger to the environment, but this time concerning an unknown perpetrator. This was in connection with the suspicion that Greenpeace ventilated in connection with welding work on the main circulation pipes. A highly detailed investigation was carried out there by the Czech Police with the participation of experts of which some were from our Office and with the participation of totally independent expert witnesses, and it was on the basis of this investigation by the Czech Police that the action was postponed. I think that two other actions also exist. One being directed at our Office for neglecting the obligations of a public official. I do not know if that action has been postponed, but I think it has. And I cannot recall the fourth action. As for the employees of Temelín, the only reason they would wish to file an action against me and why they would think they were in the right, would be that the Office has been throwing obstacles in their way and been overseeing the process of putting the nuclear power plant into operation.

Thank you. I would like to ask Mr Sýkora.

Unclassifiable

Is any possible leak in radioactivity calculated for examined scenarios of serious accidents?

Name of questioner: Anonymous

I have received a relatively simple question: is any possible leak in radioactivity calculated for examined scenarios of serious accidents? The answer is yes. We use integral codes that are capable of modelling the development of this accident scenario from its initiation right up to the deterioration of the active zone and any impact of the leak in active elements outside the containment. This parameter is called the so-called "source member". A further type of code for the extension of this activity is calculated for each of these source members. The calculations made as part of this meeting of experts have been presented. This meeting was more or less directed at the reasons for the size of the accident-planning zone. So the calculated source members were from the point of view of their consequences with the size of determining the accident-planning zone. It must be said that all the selected scenarios complied with the determined accident-planning zone. The source members, as calculated, are understandably also used within the so-called term of control and alleviation of the consequences of the origin of any serious accident. We have trained personnel, which passes through special instruction and training so it may give qualified recommendations as to how to alleviate any consequences of a potential accident and how to prevent such consequences. One of the activities of these specialised functions is to select the type of source member, which any accident may affect and, on the basis of such determined source members, this power plant would issue the first forecast in the development of any leak outside the power plant. Understandably at the moment of a real leak, these forecasts would be made more

accurate based on their own monitoring system, which is installed at the power plant. Thank you.

Could you stay here please. I know that I am taking your place, but I am sorting out the not included questions. One again is “tailor-made” for you and I think needs no preparation.

Unclassifiable

Describe the behaviour of the Temelín containment for an examined serious accident scenario (particularly the ST1-ST5 scenarios) and maybe an accident arising from the event on the 28.8 metre ramp.

Name of questioner: Anonymous

It is relatively difficult to provide answer to this question in several minutes. I understand from the question that the questioner was able, in a certain manner, to become acquainted with the presented results of this expert meeting in talking about the ST1 and ST5 scenarios. Just to provide an explanation to those present in this auditorium – this concerned individual scenarios that examined the resistance of the containment to various factors, which could affect the integrity of this containment. These scenarios were selected as the most probably determined from the probability of security assessment. Scenarios were examined of cracked primary pipes to an equivalent cross-section of 200 mm, when none of the security systems – as was mentioned here – the power plant has 3 x 100%, i.e. three-times redundant systems, of which one is there to adequately alleviate the consequences of the event that has arisen and prevent damage to the fuel, this means that we expect that none of these 3 redundant systems will have to be used. The active zone will be revealed and consequently deteriorate. This was one of the scenarios. The second scenario was a scenario for the disturbance of the integrity between the primary and secondary circuit when though the steam-generators there passes ...

...could you be briefer please ...

I apologise, so if the questioner in this case wishes to contact me, this should last hours rather than minutes. Those scenarios that examined the threat to the containment were directed at the assault on the base panel of the containment, the possibility of the danger to the integrity of the containment as a consequence of an explosion of hydrogen, were directed at the possibilities of the danger to the containment as a consequence of the so-called direct heat effect, when the scenario, during which high-pressure expulsion arises of melted metal from the reactor vessel, could result in the assault on the concrete and not only on the base panel, but also on other part of the containment. So all these phenomena have been studied and their results presented at this expert meeting. I reiterate, the containment of the Temelín Nuclear Power Plant comes out of these analyses as being highly robust and not one scenario was selected, which would mean a threat to it in the early phase of the progress of an accident.

Could you please be briefer? The author will contact you and if he is interested, he will cross-examine you.

I would like that. Thank you.

And now I would ask for B25.

2.6.2.2. Storage of spent fuel

The operator of the nuclear power plant transfer to the so-called nuclear account 50 CZK (produced MW. Temelín, at its trail stage, now produces a certain amount of electricity. Does

it already transfer a certain amount to the nuclear account or when it begins to operate on a commercial basis?

Name of questioner: anonymous

A very simple question. The answer is yes. A certain amount is already transferred to the nuclear account.

Another not included questions. Could I ask for A33 and one of the operators – Director Hezoučký or Mr Čečil. Jiří Tichý asks how is he to believe and who will pay for the possible replacement, I assume, of the turbine. Gentlemen, could you answer please.

Unclassifiable

Construction work had problems right from the beginning (it was extended by several years and cost an extra 50 billion CZK). How am I to believe that everything is all right now, when there are uncontrollable vibrations and the turbine is no longer subject to a period of guarantee? Who will pay for any possible replacement?

Name of the questioner: Jiří Tichý

I will try to answer this question briefly. I do not think that construction work had problems right from the start. We must realise when it began. I basically began at the end of the 1980s and after the political changes that came about, a possibility opened up for two things. It was not only a possibility, but also a case of necessity in one respect. We had to make sure that the power plant, which was basically constructed on the basis of a Soviet project, meets the conditions and criteria usual in the west. An enormous amount of engineering work managed to be done and we made sure that what was in the project was fulfilled. It is true and in some details some things were changed. To speak of this power plant being different, as is often said, is certainly not true. There is still the VVER 1000 reactor supplied and made by Škoda, it still has 4 cooling loops and 4 steam-generators, whose producer and supplier were Vítkovice. It still has a volume compensator and further equipment of mostly Czech or Czechoslovak manufacture. As far ASŘTP, ASŘTP was never Russian. ASŘTP, formerly this was called the management control system, from the start, was based on a Czech project. The DASOR control system. And as for an increase in costs, this is also very interesting and a sort of question of the media. I will put it this way – the extra costs, the optical costs, arose for two reasons. This first was no doubt inflation. When I, myself, calculated the costs several years, about 5 years ago, we based our calculations on the original cost, then we used an increment, which arose with the relaxation in price regulation that took place at the end of 1991 and beginning of 1992, when technological deliveries increased by 100%, construction costs – do not test me now – I have the feeling suddenly increased by 50% and then the later developments were due to inflation. If we were to calculate the remaining costs by an average inflation coefficient a year of 6%, and we all know that this inflation was much higher, then we would reach more than 100 billion. So the extra costs were not so great. At the end of the day they were lower than the rate of inflation. And another reason why this is incomparable, is the methodology used. Formerly cost for prepared documentation were not included of the engineering work, with the exception of the project, and not even fuel was included or the costs for putting things into operation. This is different today. The methodology has changed so that we can come closer to the countries of the European Union. So the change in the methodology, in my opinion, makes a difference of 20-30% in the costs.

END OF SIDE 1 CASSETTE 3

...this question continued if I am not mistaken. What about the turbine? Whoever has had to put any kind of equipment into operation knows that there are always problems with it and particularly when this concerns a prototype machine. I do not wish to use the word prototype, so I will say a machine that is like no other because Škoda, which manufactured the last big machine, had 500 megawatts. It is in Mělník, was made with different parameters and those 1000 megawatts is the first machine that Škoda produced. When you take references from other machines of a similar output in the world, you will discover that such and other problems occurred everywhere and are comparable. This does not concern the replacement to the turbine, but tuning the machine and that takes a while.

Unclassifiable

Selection proceedings existed for the modification of the Russian system. Why was Westinghouse selected when it was in a state of bankruptcy at the start of the 1990s due to lack of orders?

Name of questioner: Anonymous

I think this question should be directed to ČEZ General Headquarters, because the power plant did not select Westinghouse. But do you, by chance, know the reasons for this decision, when Westinghouse was in a state of bankruptcy due to lack of orders.

I cannot answer this. There were selection proceedings. That is true. But I really cannot tell you the reasons why Westinghouse was chosen. I think that General Headquarters, or the main administration of ČEZ in Prague made the decision.

Good. So I would like to thank you and ask Mrs Drábová to answer the next not included question – 31.

Unclassifiable

What is the situation in the development of the transmutation technology and the outlook for its industrial utilisation for the Czech Republic?

Name of questioner: Anonymous

What is the situation in the development of the transmutation technology and the outlook for its industrial utilisation for the Czech Republic? The situation is that highly intensive and very expensive research on the transmutation technology is taking place that in most cases went beyond the possibilities that the Czech Republic is capable of financing, i.e. our experts contributed to the development of the transmutation technology as part of greater international research. This is also the case elsewhere because a country such as ours cannot afford to finance such things, which almost involve basic research on its own, and must enter such international consortiums. From what I have already said, it is evident that the transmutation technology is a thing of the future and I must say that not a close thing, although some positive results have already been reached. But it is still a long way to its industrial utilisation from the point of view of mastering the technology on operating scales and from the point of view of cost. Today it can already be seen that this will one day be realised, but it is extremely expensive. I expect, and this is just my lay opinion because I am not an expert, that it will not be industrially utilised for at least the next 30 years.

Thank you. Now I would like to ask Dr. Hanzlíček.

Unclassifiable

When will the Czech government stop making concessions to Austria in the issues concerning the energy policy of the Czech Republic?

Name of questioner: Jiří Bláha

The Czech government passed the energy policy by its resolution no. 50 of last year. In this context the current requirement of the Austrian government for additions to be made to the submitted study of the effects on the environment by Temelín, on future data, on the development of Czech energy including the decommissioning of coal power plants and so on will, I think, not receive a great response simply because this data does not belong to the study.

The last 4 not included questions. Some are formulated in a way that the answer to them may not be given – A14.

Unclassifiable

Was a public opinion poll carried out? Can you state its conclusions and who carried out the poll.

Name of questioner: Jitka Žáková

Was a public opinion poll carried out? ...of what? The satisfaction of people living in the South Bohemian region? With the construction of the Temelín Nuclear Power Plant? I admit that without closer details, it is difficult to find an answer to this question.

The next question – A34. Is anyone of the operators willing to answer another of Mr Tichý's questions? Mr Čečil.

Unclassifiable

What will happen when the turbine explodes and scatters the stored nuclear waste or damage the nuclear reactor? Can a cheaper monster be stopped?

Name of questioner: Jiří Tichý

I would recommend that Mr Tichý – and we offer this to everyone – to at least to visit our information centre, so he can at least get an idea of what the power plant looks like. The turbine machine unit is located in a totally separate section. Outside the containment, outside the reactor and even if something were to happen to the machine unit, then it just cannot mechanically endanger the nuclear equipment and primary circuit which are found elsewhere.

Thank you. Then there are two last questions that are more of a financial nature. A28.

Unclassifiable

Please state the share of costs in the price of 1 kWh (i.e. operation, return, fuel liquidation).

Name of questioner: Ota Fišera

This question would probably also require closer specifications. And the last is the same.

Unclassifiable

Compare the total environmental costs per production of 1 MWh of electricity for nuclear, coal, wind, gas, water and solar power plants under the eXternE methodology of the European Commission.

Name of questioner: anonymous

This can be done as work of course, but any answer to this without the adequate documents cannot be given “of the tope of the head”.

So now because no further questions have arrived, we are coming to the end. As you were acquainted in the introduction, the purpose of this public hearing was to obtain an adequate amount of documents, - yes there is

still one more question here, meanwhile I will just state a few closing sentences – which will allow the completion of the report in a spirit that will serve as a very solid political base.

Yes, the last question has arrived concerning the containment. Namely to Mr Tyc. A40 please.

1.7.5. Containment

Could Mr Tyc please state what would happen to the containment if an aircraft were to fall on it?

Name of questioner: Anonymous

I would still like to return to the previous question, in view of the fact that nobody was here to answer it. This programme here, as has been stated, would require greater analysis, but according to this programme, the Fins have carried out an analysis recently who are deciding on the construction of a new source and analysed the economic issues of this programme, and considered whether it should be a new nuclear block, a classic block for incinerating coal, gas or peat. It was the nuclear block that came off best, of course only in case that it will be built at a locality already with a nuclear power plant. Otherwise it would be more expensive. So the Fins are preparing to build a new nuclear source.

And as far as this question is concerned: what would happen to the Temelín containment if an aircraft were to fall on it? This objection was already made two years ago by one anti-Temelín association, where it was argued that Temelín had an inadequate containment because it can withstand the fall of an aircraft weighing 20 t flying at a speed of 200 m/s, while German containments can withstand the fall of an aircraft weighing 20 t, flying, of course, at a speed of 215 m/s. This was distributed to a broad section of the public, yes this information was true, of course “b”, the other half of the information had not been stated. That the calculation of the fall of an aircraft on the containment is highly complicated and what must be considered is whether the area around the power plant has any airports nearby. If there are any then are these air force or civilian ones. If they are, then what sort of aircraft flies there and how often? When all this is taken together, then the probability of a fall of an aircraft on the containment is determined. And if such a probability of the fall of an aircraft on the containment is greater than 10^{-5} , then the containment must be prepared for the fall. In Germany there is a containment at a power plant where it was calculated that it must withstand the fall of an aircraft weighing 20 t and flying at a speed of 215 m/s. In this country the speed is somewhat lower, but another piece of truth is that the probability of the fall of an aircraft on the Temelín containment is 10^{-7} , i.e. that did not even need to deal with the question in the first place. So this is the second question, the second part of the answer, which unfortunately was not disclosed before. Thank you.

Thank you, Mr Tyc.

So back to the closing sentences. My attention has drawn to a certain inaccuracy in what I have said. The Commission will complete this report. This report will be an expert report, an expert study, which may eventually serve further continuous political decisions. I must admit that I am personally annoyed by the fact that no ecological initiatives participated in the meeting. I think that although discussion would have been livelier, but perhaps some very interesting suggestion could have been made that would prove interesting for the work of the Commission. Although ecological initiatives did not make use of this, you and they all have the possibility of sending your comments through the e-mail to the secretariat of this commission, which will be submitted to the commission.

I have still received another question. Excuse me, but I will not answer it.

Unclassifiable

What would happen if an aircraft were to fall on the Lipno Dam?

Name of questioner: anonymous

I will answer. What would happen if an aircraft were to fall on the Lipno Dam?

You asked the question yourself! Professor Říha please.

Nothing would happen because the height of the power plant is approximately 150m above the possible surface of the flood wave.

Good, thank you for this short and clear explanation.

I would like to sincerely thank you for this cultivated meeting when you all adapted to these unusual rules of work through a terminal. It is a little more complicated. But I believe that the discussions and comments were basically all factual and will be used for the further work of the Commission. Just to give you an idea, approx. 65-67 questions were dealt with here in 4 hours. I thank all who came here today to take an active part and ask their questions. I wish the rest of your day to be a pleasant one.

Together 67 comments were risen.

Appendix to the report from the open hearing in České Budějovice held on 25th April 2001

Architectonic and historical monuments

(Source: Nuclear Power Plant Temelin – documentation for assessment of impacts on the environment, Investprojekt Brno, 2001)

Assessment of cultural monuments in the catchment area has been carried out in more detail for the district of municipality Temelin with the villages Březí u Týna n. Vltavou, Knín, Kočín, Křtěnov, Lhota pod Horami, Litoradlice, Podhájí, Sedlec, Temelínec and Zvěrkovice. Some of these villages ceased to exist as a result of construction of the power plant (or have almost ceased to exist). It concerns in particular Březí u Týna n. Vltavou, Knín, Křtěnov, Podhájí and Temelínec.

Structures protected as real cultural monuments have remained from such liquidated settlements. It concerns the following monuments:

Municipality Temelín - village Knín:

Reg. No. 190 (2) A fort with a well Býšov, No. 1. A preserved stone-built fort with an attack tower. The ancestral settlement of a gentry family Býšovští from Býšov comes from the 15th century. The building is closed at present and its reconstruction is considered.

Municipality Temelín - village Křtěnov:

Reg. No. 212 (4) Area of the St. Prokop Church (a church, bell tower, cemetery). Originally a Gothic church from the end of 13th century, later changed to baroque. The oldest reference about the church dates back to the year 1261 when a pleban was introduced in Křtěnov. A single-aisle structure with a triangularly finished presbytery with graduated anterides, with a rectangular sacristy on the northern side and with a western entrance hall. Facades of the church inarticulated, a slightly spiky portal with amply shaped lining on the northern side of the body; spiky windows in the presbytery without traceries, casulated in the aisle. The aisle has a flat ceiling, the sacristy is arched with a spiky cylindrical vault. The equipment is partially pseudogothic (the main altar and side altar on the northern side of the body), two counterpart side altars at the triumphal arch – St. J. Nepomucký and Virgin Maria - are rococo from the 2nd half of the 18th century. The side altar of Virgin Maria in the body date back to the 3rd quarter of the 17th century, early baroque, portal with a new statue of Virgin Maria of Lourdes.

Frescos important from the historical point of view are in the church. Paintings in the presbytery (Křížová, V., 1999) form belts on the northern and southern walls with the width of approximately 2 m. A picture of St. Martin dividing his coat with his sword is on the southern wall, in addition figures of Donator, two bishops and a figure getting up from a grave. Virgin Maria protectress is painted on the northern wall, with St. Kateřina and St. Máří Magdalena on her sides, besides a figure of Christ and Christ at the grievous grave. A stone-built heraldry tomb stone from the end of 17th century is under the church-gallery. A free standing prismatic bell tower is located south-west from the church, a cemetery with a baroque gate in its enclosure wall is located around the church.

Note: A reconstruction of the church into its original shape was arranged by ČEZ during construction of the power plant Temelin. They financed the complete church rebuilding, including exploratory works, disclosure of the wall paintings and their conservation. A church service is organised twice a year in the church (in July in honour of the Day of St. Prokop and in November in honour of the Commemorative Day of Deceased). This also enables natives of the former parish of Křtěnov to meet. The church is closed during the rest of the year.

Municipality Temelín:

- Reg. No. 458 (1) House premises, No. 28, former forester's house, isolated settlement Rozová. Rural baroque game-keeper's house with moderately decorated gables, unusual dispositions, with a brick-built barn, dated 1824 on a beam.

Municipality Temelín - village Kočín:

- Reg. No. 192 (3) Farmhouse premises, No.13,18, the village square. A large agriculture farmhouse of the type used on Blata, composed of two sections. Very high quality traditional country architecture, retaining decorative elements and the whole original disposition. It is also important in the configuration of the village square.

Municipality Temelín - village Lhota pod Horami:

- Reg. No. 457 (5) Farmhouse. This cultural monument does not physically exist, but it has not been liquidated in the register so far.

Municipality Temelín - village Litoradlice:

- Reg. No. 238 (6) Schwarzenberger milestones. Stone-made boundary stones with a simplified Schwarzenberger heraldry, dating back to the 18th century.

Municipality Temelín - village Sedlec:

- Reg. No. 418 (7) Farmhouse premises (farmhouse, entrance, rent-charge, barn, stables), No. 6
- Reg. No. 5295 (7) Farmhouse premises (farmhouse, stables, barn, sheds, granary, gate and small gate), No.7
- Reg. No. 5296 (7) Farmhouse premises (farmhouse, entrance gate, granary, shed, barn, stables), No.8
- Reg. No. 5297 (7) Farmhouse premises (farmhouse, stables, barn, shed, granary, gate and small gate), No.16
- Reg. No. 5298 (7) Farmhouse premises (farmhouse, granary, barn, stables, shed, gate and small gate), No.17
- Farmhouses, sight important traditional country constructions with decorative gables, with details from the 19th century.
- Reg. No. 419 (8) Chapel. A brick-built niche chapel of Nejsvětější Trojice. The structure is of a baroque character from the first half of the 19th century.
- Reg. No. 420 (9) Brick-built Calvary, on the cross-road on the southern edge of the village. Brick-built post Calvary from the end of the 18th century.

For other municipalities (Týn n. Vltavou, Nákří, Dříteň, Všemyslice) and their villages, included in the catchment area, description of real cultural monuments has been made in the brief tabular form:

Table Chyba! Neznámý argument přepínače.: Real cultural monuments

Municipality	Village	Register number	Name	Closer description of place of destination
Týn nad Vltavou		493 (10)	Castle premises (castle, former garden, farmhouse)	Mír Square
		494, 495 (11)	Town house	Vinařického Square No.206 and No.205
		496, 497, 498 (12)	Town house	Fučíkova Street No. 203, No. 158, No. 159
		499 (13)	Town house	Jiráskova Street No. 40
		500, 501 (14)	Town house	Mír Square No. 38, No. 37
		502 (15)	Town hall (administration buildings)	Mír Square No. 2 and No. 25
		503 (16)	Town house	Mír Square No. 252, Modrá Hvězda
		504 (17)	Town house	Mír Square No. 251, Zlatá loď
		505, 506, 507 (18)	Town house	Puchmayer Street No. 223, No. 224, No. 225
		508 (19)	St. Jakub Church premises (church, tower, statue of St. František Xaverský, statue of Virgin Maria, staircase with doors and vases, terrace wall, area between church and terrace wall)	Mír Square
		509 (20)	St. Vít Church premises (church, cemetery, crypt, enclosure wall with gate)	
		510 (21)	Deanery premises with enclosure wall and garage (deanery, enclosure wall with gate, farmhouse with garage)	Bolojanis Street No. 220
		516 (22)	Salt-house	Solní Street on Malá Strana on left bank No. 33
		5659, 5660, 5661, 5662, 5663, 5664 (23)	Town house	Mír Square No. 84, No.,85, No.86-87, No. 88 , No. 90, No. 92
		5884 (24)	Bridge	Over river Vltava
		6005 (25)	Former inn and premises	No. 1
		6043 (26)	Iron bridge	Over Vltava
	Hněvkovice	492 (27)	Castle (castle, gate)	No. 1
		2997 (28)	Village square chapel	
		5300 (29)	Granary	On the village square No. 1
	Koloděje nad Lužnicí	197 (30)	Castle area (castle, chapel, farmhouse, park, enclosure wall, glasshouse)	Castle area
		199 (31)	Granary	
		200 (32)	St. Jan Nepomucký Niche Chapel	At the bridge over Lužnice
		202 (33)	Old Jewish cemetery	Above village in the direction of Koloměřice
		203 (34)	Monument to Matěj Kopecký	South-east from bridge in the garden of municipality office
	Nuzice	5616 (35)	Bridge	Over Židova ditch
Nákří		273 (36)	Premises of St. Petr and Pavel Church (church, cemetery, enclosure wall with a small gate, mortuary, vicarage, enclosure wall with gate, vicarage farmhouse)	Vicarage No. 21
Dříteň		90 (37)	St. Dismas Church	
		91 (38)	Statue of St. Jan Nepomucký	Relocated to the church (originally on the village square in a tree group, facing castle, in a new iron enclosure)

Municipality	Village	Register number	Name	Closer description of place of destination
		89 (39)	Castle (main building – administrator’s seat, timbered cooling chamber, commemorative part - iron cross, fishmaster’s lodge, stone-built enclosure wall, caretaker’s seat, grain caretaker’s flat, administration building, animal houses, granary with malt house, barn, stone-built square fountain, cellar)	Village square, No. 1-4
	Libív	92 (40)	Cross	On the way to Dříteň, out of village by forest
	Malešice-Bílá Hůrka	173 (41)	St. Štěpán Church (church, cemetery with enclosure wall, bell tower)	
	Radomilice	381 (42)	Former Schwarzenberger court premises (residential house, granary, gate, stables, animal houses, barn, timbered barn)	
	Záblatí	2375 (43)	Farmhouse (residential house, granary)	No. 7
		2376 (44)	Village square chapel	
		3912 (45)	St. Jan Křtitel Church premises (church, tower cross, chapel)	
		3914 (46)	Former vicarage (residential part, barn, animal houses, sheds, gate)	No. 38
		3915 (47)	Calvary	By No. 87
		5700, 5701, 5702 (48)	Farmhouse	No. 6, No. 15, No. 17
	Záblatíčko	563 (49)	Virgin Maria Church with chapel (church, chapel)	On hill on southern edge of village
Všemyslice	Neznašov	555 (50)	Castle area (castle, castle park, enclosure wall)	On the village square
		556 (51)	Residential house (residential house, gate with enclosure wall)	No. 64
		557 (52)	Premises of cemetery of Nejsvětější Trojice Church (church, cemetery, enclosure wall with gate)	
		558 (53)	Small chapel on village square	
		559 (54)	Calvary	On junction of Vltava and Lužnice
		5267 (55)	Family crypt of Bertholds family	On bank above river behind cemetery
		6076 (56)	Jewish cemetery	

5. Comments and suggestions delivered to the Czech party by the federal minister of environment Wilhelm Molterer on June 20, 2001

Evaluated area	Standpoint of the Austrian party	Standpoint of the Czech Commission
<p>Atmosphere and climate</p>	<p>The claims that the impacts of the NPP Temelín on the atmosphere are irrelevant can be professed only on condition that the NPP Temelín is being observed during its normal operation.</p> <p>The above mentioned limitation is unacceptable under the convention Espoo because the convention requires: "description of possible environmental impacts of a planned project" (Espoo 1991).</p> <p>In any case, environmental impacts have to include also processes related to fuel production and waste disposal.</p> <p>Those of possible environmental impacts that might occur only with a small probability, may be counted among them too.</p>	<p>The EIA assessment is carried out on the principle of the design stage of the building. It is based on calculations, modelling and similar. The assessment of impacts on the environment is carried out in all these cases with the source being out of operation. In addition, a topical measurement was carried out in 2000 at Temelin. It is not fully representative, but <u>it is possible to present the given report</u>, taking account of a similar operation of the Nuclear Power Plant Dukovany.</p> <p>The Espoo Convention is a quite different document from the EIA standard. It is not possible to bring the description of <u>possible impacts of the planned project</u> on the environment because the Nuclear Power Plant Temelin <u>has been already built</u>. The possible expected impacts of the nuclear power plant on the environment are clearly stated in the Assessment of the Commission.</p> <p>Processes connected with the fuel production do not come under nuclear power engineering. Chapter Assessment of the Commission is devoted to the waste disposal.</p> <p>It is possible to agree with this statement and the Assessment of the Commission respects the mentioned axiom.</p>

	<p>Submitted documentation does not bring forth convincing evidences. Particularly, more specific data concerning used calculation model are missing, as well as the data on input meteorological parameters.</p>	<p>The computer models are used depending on the character of the events which are assessed.</p> <p>If the influence is assessed by the normal operation, by which running (permanent, practically constant in time) emissions take place, a complex programme NORMAL is used which was developed in the Institute of Information Theory and Automatisation of the Czech Academy of Science in Prague (Pecha P, Pechová E, 1999) in order to assess radiation loads of the environment and population in the surroundings of nuclear plants. This programme takes account of and mathematically processes in detail the following aspects:</p> <ul style="list-style-type: none"> • space distribution of the ground concentrations of radionuclides in the air and their deposition to the Earth surface (taking account of the orographic characteristics, meteorological indications including the influence of rainfalls, the deposition rate and backward turbulence of light particles, influence of the local air streams in the proximity of buildings etc.), • penetration of radionuclides into the foodstuff and their movement in food chains (including deposition on the plant leaves and penetration into the plants by means of a root system, calculated with regard to the characteristics and practice of the agricultural production, to vegetation periods, movement and transformation of radionuclides in plants as well as in the environment, factors of the natural decontamination on the one hand and fixation of nuclides on the other hand etc.), for plant foodstuff as well as for feedstuff and animal food, • adjustment of the gained data for entry of radionuclides and their activity into the people's organisms (using the average consumer basket for the Czech Republic)
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		<p>average consumer basket for the Czech Republic). Using the NORMAL programme, the meteorological indications are taken over from long-term observations in the place of source. Data related to those observations have been made public on a website of Ministry of Foreign Affairs of the Czech Republic in the document "TEMELIN NPP - Documents for Environmental Impact Assessment, March 2001" in Appendix 3 of this material.</p> <p>However this programme is not suitable for assessment of extraordinary or emergency conditions when rather extensive emissions take place in the comparatively short and limited time period. The EGP computer programme "HAVAR" was used for the calculation of the activities distribution in the atmosphere after the mentioned events with the consecutive definition of the radiation load of the population in the surroundings of the power plant. The programme helps to analyse and assess the radiation situation in the surroundings of the NPP in case of any extraordinary leakage of radionuclides into the environment. The flexibility of the product allow to include the partial leakage of a smaller extent with a specific scenario as well as more serious postulated emergencies of MPN type, including LOCA. On the first stage of calculation the atmospheric dilution of the discharged harmful pollutants and immediate and integral values of the ground volume activities in the air is defined. This is followed by the calculation of the area activities deposited on the terrain, taking account of all factors of the concentration reduction of the radioactive foreign matters in the cloud, taking in consideration the most important daughter products. In addition five possible ways are taken into consideration, leading to the exposure of persons, whose eventual</p>
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	<p>There is no notion about the issue of small-dosages effects.</p>	<p>radiological load is expressed by means of doses. Using this programme, the actual most adverse meteorological conditions are taken into consideration. In case of a particular event, the calculations would be corrected according to the actually measured values all in the stable and mobile monitoring stations and they would be used for taking decisions on protective measures.</p> <p>The question does not say exactly how low doses the questioner has on his/her mind. Every organism on the Earth is exposed to the doses from the ionising radiation which surrounds us (a natural background). Such doses are by several orders higher than contributions of those doses from the operation of nuclear plants and are variable in place and time. These fluctuations are also of a higher order than the contributions of such doses from the operation of power plants. Conservatively, respecting the preliminary precaution principle, the no-threshold principle of the ionising radiation effects was accepted. Using it, risks from these doses are assessed, implementing the extremely conservative values – the project values which are always considerably lower than the real values. It is worth mentioning in this connection that the principle of no-threshold effects of the ionising radiation is only one of the possible effects. It is an accepted rule for it to be accepted, used and developed, but it does not mean that it explains all observed features completely. Some specialists do not agree with the no-threshold principle. Another part of the professional world incline to the idea that small doses are useful. It is very probable that with the development of knowledge, especially on the cellular level, the future assessment procedures will be in a certain way modified in</p>
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		<p>comparison to the today's procedures.</p> <p>As for radionuclides outflow into the air, the values are given in Table 1.</p> <p>The health consequences which are acceptable according to all internationally recognised criteria, have been calculated from them as well.</p> <p>However it is necessary to remind that the expected real values of yearly discharges will be much lower (the reality eliminates only the unrealistic conservative presumptions used in the calculation). Because we cannot supply any real measured values (NPP Temelin is not in the commercial operation to consider such results representative), we have used and we use the analogy with the Nuclear Power Plant Dukovany for illustration, because it is similar in its size and technology of operation. The real effluents were given there in Tables 2, 3 and 4 and Diagrams 1, 2 and 3 in comparison to the limits for several last years.</p> <p>Starting from 2000, a limit in the equivalent dose of 40 μS per year is defined for NPP Dukovany as well. The actual effluents in comparison to this limit and equivalent dose from the natural background are obvious from Table 5 and Diagram 4.</p>
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<p>Water</p>	<p>According to the Czech commission EIA, there are outlasting considerable uncertainties concerning the examination of a possible contamination by the means of groundwater leaking through cracks in the ground. In cases when damages arise, the particulars, bounded in fluvial sediments of erosions, may be revived, and consequently drinking water supplies may be put into risk again.</p>	<p>The text is pursuant to the diction of Czech evaluation of considerable diffusion in the values of the coefficient of filtration and unspecified uncertainty in the estimate of efficient porosity. The risk is exclusively connected with the square or line release of radioactive particles above the scope of acceptable values in case of a maximum projected accident, when preference paths (failure ranges, tectonic lines, cracks, and possibly artificial network) could be hit. According to the examination, the preference paths point in the NE towards Vltava, in the S and SW to Budějovická pánev; contrary to that the direct endangering of Třeboňská pánev can be excluded.</p> <p>The exploration has documented a vertical zonality of the natural flow. Natural mixture of waters from shallow and deep floors of the groundwater does not occur (dividing line app. 25-30 meters). The rate of uncertainty is being continually reduced by the continuing geophysical exploration and monitoring.</p>
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In the documentation submitted by EIA, in a part dealing with waters, the following items can be marked as key ones:

- (A) Securing the amount of drinking water, and its quality
- (B) Securing the amount of water for technical purposes, and its quality
- (C) The risk of the radioactive pollution of the output sewer by releasing of water containing tritium (2.2.4.3)

However, the following items need to be pointed at:

1. Discharging of waste waters containing tritium under a normal operation of the equipment, as well as introduction of certain activities of other radio-nuclides, are subjected to approval of the operation of the NPP Temelín. This fact as the whole, especially in connection with introduction of other waste waters and waste heat, represents a burden for the relevant environmental water systems, and consequently, possibly also for a human food chain.
2. In case that providing for supplies of cooling water into the NPP Temelín is preferred to environmental protection, then waste waters give rise to environmental problems during the periods when less water passes through.

Limitation to the above mentioned key problems is due to not looking at synergic impacts of various effects, and is in conflict with the environmental priorities which the very report mentions.

According to our opinion, it is therefore not possible to agree with the conclusions of the Commission that "Impacts of the NPP Temelín on the hydrosphere are low and acceptable" (Commission 2001, Chapter 2.2.4.3). The Czech Commission on finding environmental impacts (EIA) shares the opinion that this conclusion needs to be factually documented only by several years of observing the operation.

Water economy of the power station is largely over-designed and bountifully subsidized by the enriched flows from the natural reservoir Lipno. Granted minimal flow in the profile of the extraction (Hněvkovice 6,5 m³/s) and the outlet (Kořensko 9,45 m³/s) solves the problem of the necessary diluting of pollution, including tritium. Based on the method of comparative analyzes, and by comparison with the operation of the Nuclear Power Plant Dukovany after 15 years of its operation, it may be expected that synergic environmental impacts of discharges (waste heat, tritium and other pollutions) will not be significant; on the contrary they will be below the line of detection.

<p>Imperilment by earthquakes (seismic and tectonic activities)</p>	<p>In the submitted assessment of the EIA processed by the Czech nongovernmental commission, the comparison of different evaluations of earthquake imperilment has been made for the first time. However, the values of acceleration, relating to civil constructions instead of the requirements for nuclear equipments, are compared there in a non-permissible way.</p> <p>While the most of Czech authors considers the earthquake intensity from 5,5⁰ to 6,0⁰ MSK-64 for the SSE (safe shutdown earthquake) to be sufficient, the value of 6,5⁰ MSK-64 set for SSE should be conservative enough (“to be on the safe side”). Only from historically risen damages, the values of which relate to this area (Neulengbach, 1590, epicenter intensity 9⁰ MSK-64) the conclusions can be made that the values set forth are valid also for the South Bohemia.</p> <p>The most intense earthquake known cannot, however, be considered to be equal to the possibly maximum earthquake. The most intense earthquake observed in the neighborhood of Neulengbachu showed the intensity of $I_0 = 9^0$ MSK. A maximal possible intensity for the Neulengbach region would then be $I = 9^0$ MSK + $1^0 = 10^0$ MSK.</p> <p>Besides that, thoughts of tectonic activities during the last 780 thousand years are not based on any modern exploration methods (paleo-seismology, anti-dating). Continual monitoring of micro-earthquakes practiced for the period of 10 years does not enable the acquiring of any data on possible hard earthquakes which might had occurred in a longer time distance of hundreds or thousands years.</p>	<p>The location of the earthquake Neulengbach 1590 (approximately 30 km in the western direction from Vienna) and location of NPP Temelin are given in the documents worked out by our party (Schenkova & Schenk 1999 – fig. 1). The distance is approximately 135-140 km. The observed intensity 6° MSK-64 is specified for Soběslav on the macroseismic map worked out by Prof. Gutdeutsch in 1987 (fig. 2). To explain its importance, macroseismic observations worked out by Dr. Hammerl (1987) are presented first for the wider surroundings epicentral area of the mentioned earthquake (fig. 3).</p> <p>It is shown in the study worked out by Dr. Hammerl that the increased epicentral macroseismic intensities are directly connected with the type of bedrock: a strong increase of the intensity values (increase by at least 1° MSK) takes place on insufficiently compact bedrock and on river sediments. This fact is generally known from the seismologic practice. The epicentral intensity may be therefore assessed to 8° až 9° MSK for the places with outcrops of a bedrock. This intensity may increase then up to 10° MSK for the localities with unconsolidated rock due to the environmental effects. If the local increase of the macroseismic intensity in the surroundings of Soběslav (fig. 2) is assessed with the same criterion and is compared with surrounding observations, we will get a similar result. It is known that Soběslav is located on deposits of river Lužnice (see the geological map) and if a possible housing is considered in 1590, it may be assumed that the damage caused by the mentioned earthquake was most probably caused to the object placed on these deposits.</p> <p>However all this information has been already mentioned in the Commission report handed over to the Austrian party.</p> <p>Results published by Dr. Lenhardt (1995 – fig. 4) as well as the results gained in the international project GSHAP (1999 – fig. 5) have been presented. Fig. 4 shows that values of the effective acceleration will not be exceeded by 90% for the frequency period of 475 years on the territory of Austria. This is the criterion defined for standard buildings in EUROCODE-8. Dr. Lenhardt used the formula $A_{\text{eff}} = 2/3 A_{\text{max}}$ to transfer the effective values to maximum values.</p>
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	<p>The value 6,5⁰ MSK-64 acquired in this way is therefore not sufficient and does not comply with the recommendation IAEA 7⁰ MSK-64.</p>	<p>If we take account of distribution of earthquake in the whole area (fig. 1), it is evident that the locality of the NPP Temelin can be affected only by Alpine quakes. If the values $A_{\text{eff}} = 20-40 \text{ cm sec}^{-2}$ (i.e. $A_{\text{max}} = 30-60 \text{ cm sec}^{-2}$) expected in a wider zone around the border with the Czech Republic extrapolate to the territory of the Czech Republic to the location of NPP Temelin, it is obvious (in accordance with development of the individual isolines and extent of the individual seismic zones) that the acceleration values A_{eff} should not exceed 20 cm sec^{-2}, i.e. $A_{\text{max}} \leq 30 \text{ cm sec}^{-2}$ for NPP Temelin. In the seismological praxis the given value A_{max} corresponds with 5° MSK. It means that the standard buildings in the surroundings of the NPP Temelin should be designed for the value 5° MSK. There is a map of seismic zones in the Czech standard ČSN 73 0036, in its 2nd appendix, which gives the value to 6° MSK for the mentioned area, i.e. approximately $40-50 \text{ cm sec}^{-2}$. If we assume a lower damping of seismic vibrations, we come to a clear agreement.</p> <p>Similar conclusions also result from fig. 5 worked out by the team of seismologists within the Global Seismic Hazard Assessment Program (GSHAP/ILP/IASPEI).</p> <p>It is known from practice that the extent of seismic danger recommended by IAEA for nuclear plants is usually higher by approximately 1° MSK in comparison to the standard intensity values, or the acceleration values are considered doubled. It is given in the materials for the Nuclear Power Plant Temelin that the main parts of the power plant are projected for 7° MSK (IAEA recommendation), i.e. for 100 cm sec^{-2} or for 0,1 g. A further additional increase of safety up to 0,12 - 0,14 g for the especially sensitive parts of the</p>
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		<p>power plant is given in the assessment carried out by the company Stevenson (Masopust 2001).</p> <p>All these values show that all Austrian and Czech materials acknowledge that the value of 7° MSK is fully appropriate to ensure safety of the power plant.</p> <p>Monitoring of the local seismic activity carried out in accordance with IAEA recommendations is to generally confirm or disapprove the presumption concerning the compactness of the geological block on which the building site is located. Monitoring is recommended in the areas with the low seismic activity within the period of 2 to 3 years. Such measurements have been already carried at Temelin for 10 years and clearly show the suitability of the building site (fig. 6).</p> <p>In addition, the ten-year measurements have not affirmed the elongation of the Jáchymov fault into the area of southern Bohemia some Austrian geologists mentioned at the beginning of 90-ies. Their views were considered by the IAEA mission headed by Prof. Gürpınar and therefore the measurement was oriented on this problem as well.</p> <p>Local seismic data are not used to define the maximum possible earthquake. Czech specialists have applied all known methods based on seismologic, geophysical, geological and geodetic data to specify the maximum earthquakes of the source areas.</p> <p>The Austrian party confirmed on the public hearing in Vienna on 26th June 2001 that Dr. Schenk has already sent many seismologic materials to Austria and it should not be a problem for the future either to provide the necessary materials. In the following discussion which took place on the adjacent premises of the main hall the Austrian specialists expressed their appreciation of the positive</p>
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		attitude to the above mentioned items. They appreciated in particular the proposal mentioned in the Commission Assessment asking the Czech and Austrian colleagues to meet and clarify “controversial” opinions on workshops.
Health effects of radiation	<p>The exploration of the NPP Temelín’s effects on the health of citizens takes exclusively into account the impacts of a normal operation. Only the range of 13 km around the NPP Temelín is being observed.</p> <p>In contrast with all the other texts EIA, the impacts of an accident exceeding this range have not been eliminated from the study. However, they have not been analyzed because a forecasts relating to the relevant areas have not been made.</p> <p>The range within 30 km is just the one where large cities are situated. It would be very important, in order to record long-time effects of the operation of the NPP Temelín, to find out about health conditions of their citizens. The findings are therefore insufficient. A serious deficiency of the health study is the absence of data on diseases that can demonstrably arise due to ionizable radiation (cancer of thyroid gland, children’s leukemia, occurrence of children with hereditary defects).</p> <p>It is still unclear how the health conditions of citizens will be observed in the future.</p> <p>We cannot associate ourselves with the calculations of dosages in case of presupposed accidents and during normal operation.</p> <p>Although health offices are ready to monitor possible effects of NPP Temelín’s operation, the Commission considers it to</p>	<p>Importance of the 13 km circular zone around the nuclear power plant has been misunderstood in the standpoint of the Austrian party and is wrongly related to monitoring of the health state. The area specified in such a way has the importance of the <i>emergency planning zone</i>. It is a circle of population for whom the preferential implementation of immediate action is planned on the early stage of accident, including distribution of potassium iodide tablets and possible immediate evacuation. A circular ring of 3-5 km from the power plant is to be distinguished from it, by which a <i>critical group of inhabitants</i> is defined, i.e. a group of inhabitants with the expected highest radiation load in consequence of the <u>nominal operation</u>. The average yearly dose for these inhabitants represents an important indicator in the system of the radiation protection standards, limiting exposure of population. However the <i>demographic analysis related to the distant surroundings of the power plant</i> are also available, forming a necessary presumption for analysis with regard to the possible exposure of population in a wider extent. Certain information from those analysis is given in the report of the independent commission, at present 258,008 inhabitants are estimated up to the distance of 30 km, 544,720 inhabitants up to the distance of 50 km. The regional centre České Budějovice with 160,000 inhabitants is in 22 km from the nuclear power plant.</p> <p>The false idea that assessment of the health state is and will be restricted only to the 13 km zone resulted probably from the fact that the pilot study of the health state of the</p>

	<p>be unnecessary.</p>	<p>population in the surroundings of the Nuclear Power Plant Temelin, completed in 2000, was really restricted only to this area with the total number of about 11,300 inhabitants. The importance of this study was mainly methodical because it could not bring any information about the radiation influence of the power plant which was not in the operation at the time of examination. At the present time a proposal is presented for a prospective study which would include the immediate surroundings with 9,800 inhabitants, a wider surroundings with 19,300 inhabitants and the town of České Budějovice. At the same time certain checking areas with approximately the same social demographic characteristics are proposed.</p> <p>In addition to monitoring the overall death rate, monitoring of special health characteristics is considered (including monitoring of thyroid cancer, children leucaemia, reproduction indicators and possible congenial deficiencies which are mentioned in the Austrian standpoint) and finally the application of the molecular epidemiology methods is also considered. It is necessary that the information on the health state of the population in the surroundings of the Nuclear Power Plant Temelin is available, it is necessary to harmonise this need with the strategy of monitoring of the state of health in the whole country, because there are areas on the territory of the Czech Republic, which require a similar examination, taking account of a number of other industrial harmful pollutants.</p> <p>By taking decisions on the studies concerning the state of health in the relation to the Nuclear Power Plant Temelin, the assessment of their effectiveness may not be omitted either, especially if such financially exacting methods are planned in such an inappropriate extent, such as the cytogenetic analyses using the FISH equipment or assessment of the genetic polymorphism of a gene. A question may be asked here whether the financial means directed to other measures would not bring more significant</p>
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		<p>benefit for the health protection or signalisation of its possible risk. Monitoring of the health state is not a sufficiently sensitive approach which would reveal adverse conditions of the operation of the nuclear power plant and operatively act in the protection management. There is a big difference between the sensitivity of such examinations and methods assessing the level of emissions, and a large span between the emissions sensitivity measurement in the environment and measurement of emissions at their output from the nuclear power plant on the next level.</p> <p>Nobody possibly questions the fact that if no exposure of human tissues takes place (or if the accessory exposure is by three or more orders lower than the natural background) it is not possible to speak about any noticeable effects of radiation. And at the same time the concentration of radionuclides in the component parts of the environment is expected to be so low during the nominal operation that they will not be, apart from a few exceptions (such as tritium), measurable at all. Nevertheless the continuous measuring of these indicators is ensured and this is significantly more sensitive approach to the assessment of a health risk than the health state screening. However even such measurements are not sensitive enough for the operational protection management because they do not say anything about fluctuation of the very low concentrations in the environment within the zone under the sensitivity limit of the methods. They only represent another barrier to ensure protection which becomes actually important only in case of any serious operational deviations or accidents. <i>Only the results of measurement of emissions from the nuclear power plant represent the actual data significant for the operational protection management and for the proof that</i></p>
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		<p><i>the standards allowed by the supervisory authority for the nominal operation have not been exceeded, i.e. first of all gaseous effluents and aerosols from a chimney and liquid discharges to the drainage canal.</i></p> <p>A note related to the way of calculation of the radiation load of the population: It is necessary to explain here the connection between the effluent measurements and assessment of exposure of the population. Standards for discharges are given in a directly measurable quantity, which is the specific activity of the radioactive substance ("concentration") with the unit Bq/m³. By means of models for spreading in the atmosphere or water environment, deposition models of those substances and their penetration by the way of inhalation and food chains to the human, it may be finally calculated what content of radioactive substances may be on average expected in the human body. Such content will be primarily expressed by the activity again, it means in Bq units. However the biological effect of this internal contamination is in no way correlated with the level of the deposited activity (with the Bq quantity in the organism), but only with the radiation dose (Gy), or the equivalent dose (Sv) created in the body by this deposition. If the radiation load is expressed in a dose, then the knowledge about the relation of a dose and biological (health) effect may be used and we may assess the health importance of the internal radiation. The transition of radioactive substances intake in Bq to the effective dose in Sv is not simple at all, it is necessary to carry it out separately for every radionuclide, for several categories of its physical chemical characteristics (solubility), for various ways of entry, or even age groups, if necessary. Such</p>
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		<p>conversion factors have been calculated by international groups of specialists and they are tabulated in the corresponding international recommendations and national regulations, also in the decree of the State Office for Nuclear Safety of the Czech Republic No. 184/1997 Coll. In the recommendation of the International Commission of Radiological Protection (ICRP) of 1977 the standards for the internal contamination of the population had been standardised as an intake in Bq units (Annual Limits of Intake), however the application of the conversion coefficients was assumed in the last ICRP recommendation of 1991 and the standards for protection of staff and population were expressed uniformly both for external and internal radiation – in the equivalent dose, in Sv, or mSv. This approach has been taken over in the key document issued in 1995 as a result of co-operation of IAEA, WHO, ILO, FAO, NEA/OECD "International Basic Safety Standards for Protection against Ionising Radiation and for the Safety of Sources", which also tabulates the mentioned conversion coefficients. The European Union directive 96/29/EURATOM proceeds in the same way as well. In accordance with this, the effect of effluents is assessed in the effective dose value for the critical group of population around the source at the Nuclear Power Plant Temelin and the effluent values are retroactively derived, documenting by monitoring that the values of effluents are not exceeded, <u>respecting their radionuclide composition</u>. In our opinion the standpoint of the Austrian party is not to be understood as a refusal of this approach. As for the details concerning the models of spreading, deposition and transfer of radioactive substances into the components of the environment, the alternative approaches</p>
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		<p>to the choice of entry data and their mathematical processing may be discussed in the appropriate time within a group of experts. The influence of alternative models is generally further specified and examined only provided the procedure according to the alternative models may reverse the attained conclusions. According to the available literary documents and professional estimation, it may not be expected in this case that this specification would systematically influence the results presented in the report of the independent Commission and its conclusions, as far as the possible health risk is concerned.</p> <p>Assessment of effluents of radionuclides into the air and drainage canals is strictly regulated in the Czech Republic in the Act No. 18/1997 Coll. and decree No. 184/1997 Coll. The State Office for Nuclear Safety assess a number of documents presented by the applicant in accordance with these legal regulations and approve some of them in the licensing (authorising) process with regard to workplaces of a similar type like a nuclear power plant. No particular activity may be started without this approval. Among the assessed documents related to effluents are as follows:</p> <ul style="list-style-type: none"> - Pre-operational safety report - Monitoring programme - Permission to release radionuclides into the environment - Limits and conditions for the safe operation, which are approved by the State Office for Nuclear Safety, and the approved, authorised values of effluents into the air and drainage canals are their part. <p>To illustrate the legislatively defined requirements, it may be quoted from decree No. 184/1997 Coll. as follows:</p> <ul style="list-style-type: none"> - Upper optimisation limits, i.e. values of the effective dose
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		<p>for the particular critical group of population, where the operation of the given source is not considered safe if they are exceeded. Such values are represented by doses of 250 $\mu\text{Sv}/\text{calendar year}$ for all discharges and effluents where 200 $\mu\text{Sv}/\text{calendar year}$ is related to the effluents into the air and 50 $\mu\text{Sv}/\text{calendar year}$ to the discharges into drainage canals.</p> <p>- Values where the radiation protection level is considered to be adequately proved (optimised) if the values are not exceeded; such a value is represented by a dose of 50 $\mu\text{Sv}/\text{calendar year}$ for any individual from the population. The State Office for Nuclear Safety have defined the authorised discharge limits for both nuclear power plants on the basis of the presented optimisation study. The value of such limits is lower than the mentioned 50 $\mu\text{Sv}/\text{calendar year}$.</p>
Nature and the landscape	-----	
Waste/ spent fuel	<p>The EIA documentation of the investment project and the Commission did not take into account the standpoint of the Austrian party set forth in EIA I and EIA II regarding the questions on obscurities relating to waste:</p> <p>As to the technology of changing liquid waste into bitumen, the documents submitted by the Commission talked for the first time about the advantages and disadvantages of this technology, and admitted that "the disadvantage of changing into bitumen is based on the increased danger of fire".</p>	<p>Every used technology has its advantages and disadvantages. It is the same in case of technologies for disposal of liquid radioactive waste. To compare it, advantages and disadvantages of the technologies of bitumenation and cementation are presented in the Commission report. And the mentioned bitumenation "disadvantage" is compensated by the incomparably lower volume of waste to be disposed in the disposal (in this case RAWD Dukovany). To compare it, 1.5 - 2 m^3 solidificated radioactive waste (RAW) is to be disposed by cementation of approximately 1 m^3 concentrate of the liquid RAW. By bitumenation of the similar quantity of the RAW concentrates, approximately 0.4 – 0.6 m^3 solidificated radioactive waste is to be disposed. The storage volume economy is therefore obvious. If the today's capacity of RAWD</p>

	<p>The final remark in the document on the question of burned fuels is as follows: "Handling of burned fuels, that is, their storing, transportation and storing in subterranean</p>	<p>Dukovany (55,000 m³) contains all low and middle active waste from the production of both power plants (Dukovany and Temelin, operation of both of them for 40 years), then in case of use of the cementation technology a storage volume of approximately 80 – 90 thous. m³ would be necessary (further to the share of the fixed liquid concentrates of the radioactive waste). The difference is therefore obvious but it would not be the only waste. Considering the incomparably higher extractability of the individual radio-nuclides from the cement matrix in comparison to extractability from the bitumen matrix, the risk would be higher for the mentioned group of population (around the disposal). Justification of the choice of bitumenation as a technology for disposal of liquid concentrates of radioactive waste on the power plant Temelin is specified in the report (both of Investprojekt and the Expert Commission). In addition, the measures taken on the power plant are summarised in the expert commission report to eliminate possible fire risks on bitumenation lines, which are comparable with the measures taken for the same reasons on the bitumenation technologies for processing of the liquid radioactive waste world-wide.</p> <p>We cannot agree with the opinion of the Austrian party in this case. In the EU as well as in other parts of the world where the nuclear power engineering is used, there is an unambiguous agreement in the opinion that today only the deep disposal is the final solution for disposal of the spent nuclear fuel (SNF), as well as the highly active waste (HAW), after it has been reprocessed, and this way is technologically and economically practicable. Deposition of the spent nuclear fuel and highly active waste in deep (approximately 500 m under the surface) parts of the rock environment allows to eliminate risks from possible release of the contained radionuclides to such an extent that the human population and the environment will not be endangered even after hundreds of thousands years. In addition, the permanent disposal under the surface eliminates effectively the possible risks of misuse (non-proliferation) for terrorist or other purposes.</p> <p>Localisation of the deep geological disposal itself remains the open question in the majority of countries operating nuclear power engineering. This problem has been solved only in Finland and partially also in the USA. This is being</p>
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	<p>depositories, does not represent unsolvable or risk problems both from technical and technology points of view.” At the same time, one of many reasons of the whole-world’s withdrawal from or abandonment of using the nuclear energy is the unresolved storing method. Decades of years after the initiation of a commercial use of nuclear energy, the problem of removal of burned fuels or highly radioactive waste (HAW) originating from its treatment, has not been solved in the world.</p>	<p>solved in the Czech Republic in accordance with the ”Conception of Disposal of the Radioactive Waste and Spent Nuclear Fuel in the Czech Republic”, which is being discussed at present. The conception assumes to open the deep geological disposal in 2065. A suitable locality is to be found by that time (by 2015) and the disposal system is to be proposed and the disposal site is to be built. With regard to the geological situation it is assumed to build such a disposal system in the granitoid environment (in the granite massif). Several potential localities have been found. A detailed geological prospecting has not been started yet.</p>
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<p>Prevention of accidents and the project accidents</p>	<p>Sufficient safety, profoundly effecting the efficiency and reliability of a multi-barriers conception (“Defence in Depth” (INSAG-3, INSAG-12), is not provided for in Temelín.</p> <p>Pursuant to European practice, such an equipment displaying these safety risks could not be operated.</p>	<p>Nuclear safety of the Nuclear Power Plant Temelin is ensured on the fully comparable level as for the other power plants of PWR type in Europe and in the world. All five levels of the depth safety level are sufficiently covered in the design and implemented in the locality. Safety insufficiencies or deviations of the design of power plants with reactor VVER – 1000/320 are summarised in the IAEA document – (Safety Issues). Such deficiencies or deviations have not a significant influence on reduction of the nuclear safety. The Czech party presented their elimination or compensation in the document handed over to IAEA in 2000, which is also at the disposal of the Austrian party. It is documented that all safety problems are taken into account and solved. According to the IAEA experts and others, Nuclear Power Plant Temelin is the best power plant among the units of the same type.</p> <p>In accordance with the international practice, the countries that operate nuclear power plants are responsible for nuclear safety. The nuclear safety regime is defined in the Czech Republic in the Act No. 18/1997 and following decrees. Independent supervision is performed by the State Office for Nuclear Safety. The nuclear safety regime as well as performance of the nuclear safety state supervision in the Czech Republic is in accordance with international recommendations and practice of western countries, which was confirmed by the IRRRT mission organised by IAEA in June 2001.</p>
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		<p>Apart from other problems of radiation and nuclear safety, the State Office for Nuclear Safety (SONS) assessed problems of possible radiation consequences in the safety documentation for granting a licence within the licensing process of the Nuclear Power Plant Temelin. The following issues have been assessed in accordance with the legislative of the Czech Republic in force and with the recommendation of the International Atomic Energy Agency (IAEA) SS/99 (Table 1).</p> <ul style="list-style-type: none"> - Design accidents, which are analysed from the technological point of view and from the point of view of possible radiological consequences in Chapter 15 of the Pre-operational Safety Report (hereinafter referred to as "PoSR"). - Beyond design accidents and serious accidents, which served as a base for definition of the emergency planning zone. It concerns the events which radiation consequences may exceed the radiation consequences given for design accidents in PoSR. Information about results of such events analysis have been handed over to the State Office for Nuclear Safety outside the framework of the standard licensing documentation. In accordance with the government order No. 11/1999 the operator provided SONS with a list of emergencies with the probability higher or equal to 10^{-7} in a year, including their consequences.
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For the purposes of definition of the emergency planning zone extent of the Nuclear Power Plant Temelin, the maximally hypothetical sequences with the frequency probability of approximately 10^{-10} /year (i.e. once in 10,000,000,000 years of operation of the nuclear power plant), for which the worst radiological consequences may be assumed, were used in the first approach. In the next step the radiological consequences of the "more realistic" scenarios, events chosen on the basis of the PSA results of the 1st and 2nd level have been taken into account, with the frequency probability higher (more frequent) than 10^{-7} /year, (i.e. more than once in 10,000,000 years of operation of the nuclear power plant). From the point of view of radiological consequences for the surroundings of the Power Plant Temelin, the events have been therefore assessed with probability by an order lower than it is anticipated in the IAEA SS/99 recommendation.

The following may be stated on the basis of the results of the analysis presented to SONS: It follows from the results of analysis specified in PoSR (this report has been made available to the public by ČEZ a.s.) assessed by SONS that **design accidents** analysed in Chapter 15 of this report will not affect (even cannot affect) a territory of a foreign state.

As far as the assessment of **beyond design accidents and possible serious accidents** is concerned, a workshop was organised at SONS on 4th April 2001, devoted to this topic. The Czech and Slovakian experts presented results of the carried out analysis on this workshop. A summary of these presentations has been also published in the document "Assessment of Beyond Design and Severe Accidents Consequences", May 2001 (hereinafter referred to as D1) published together with materials of this commission.

For two out of three examined reference accidents, which as example accidents have relatively limited radiology impact to the environs, it might be assumed that they will emerge less frequently than heavy accidents.

In the EIA documentation there was no notion on an example

	<p>The above mentioned shortages need to be negotiated also within the whole EIA concerning Temelín. The European EIA regulation of the Council 97/11/EG as of March 3, 1997, Article No. 6(3), and the appendix IV (EU 97/11/EC) require from the project operators: "description of the equipments for the prevention, reduction and, if possible, compensation of negative impacts".</p> <p>The value of $2,6E-5/ra$, as set forth in the documentation EIA and relating to "the risks of heavy accidents emerging in the NPP Temelín", is unacceptable and against the Probability safety analysis, written for Temelín in 1995, as well as the data provided for by SÚJB (May 2001) for the event of heavy accidents.</p> <p>According to results of this analysis of 1995, Temelín does not fulfill the safety aims of the International Office of Nuclear Energy (INSAG-12) relating to already run equipments.</p> <p>For two out of three examined reference accidents, which as example accidents have relatively limited radiology impact to the environs, it might be assumed that they will emerge less frequently than heavy accidents.</p>	<p>Detailed information on ensuring safety of the Nuclear Power Plant Temelin, i.e. measures preventing and reducing and possibly compensating hampering impacts, may be found in safety reports (preliminary, pre-operational), which the Austrian experts had at their disposal.</p> <p>The value $2,6 \times 10^{-5}/\text{year}$ is not given in Chapter 2.7. "Assessment".</p> <p>The given value is apparently related to the PSA study, level 1, which was worked out in 1995-1996.</p> <p>It is necessary to mention the following to that:</p> <ul style="list-style-type: none"> - probability assessment of safety is not a part of the approval process either the Czech Republic, or in any other country - the given guide IAEA values bear only a character of recommendation, i.e. in case of exceeding a corrective action is expected in the areas with the highest risk - the PSA methodology is being improved all the time world-wide, including specification of entry data - Nuclear power Plant Temelin is to complete the upgraded PSA studies in 2001-2002 <p>All emergency situations defined in the document NRC (Reg. Guide 1.70) are analysed in detail in Chapter 15 "Preliminary or Pre-operational Safety Reports".</p> <p>Three emergency situations have been chosen, which belong to categories III and IV, i.e. among the most serious accidents which the Nuclear Power Plant Temelin is able to manage within the design. Their aim was to demonstrate</p>
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	<p>In the EIA documentation there was no notion on an example of defects significant for the NPS Temelín when a penetration from the primary to the secondary circuit may occur.</p> <p>The documents do not pay sufficient attention to the accidents originated as result of outer events.</p>	<p>emergency situations of various types. This selection represents the qualified selection of the Czech party. Reference accidents are defined as example cases in order to demonstrate the facts that those emergency situations have a limited radiological impact on the surroundings of the nuclear power plant. Orientation data concerning probability of their occurrence show that those cases are very low probable. Probability of serious accidents, depending on the selected sequence, is substantially lower. Probability of the accident with a liquid leak does not apply to the reactor and has no relation to the accidents with damage caused to covers or to the fuel of the active zone of the reactor (therefore they cannot be compared); it is also the example of an event caused by external effects.</p> <p>The operator of the Nuclear Power Plant Temelin and the specialised organisation have available the verified computer codes of western countries to be able to solve the course and consequence of design accidents (RELAP, ATHLET, CATHARE) as well as beyond design accidents (MELCOR, ESCADRE).</p> <p>According to the present EU directives, the beyond design accidents are not a part of the EIA assessment.</p> <p>Assessment of all design accidents is available in safety reports (i.e. even the accidents with breach from the primary into the secondary circuit) and all of them comply with the dose criteria specified for the individual categories of events.</p> <p>Possibility of accidents caused by an external action, which are relevant for the locality of Temelin (an aeroplane crash, gas transmission line, earthquake), is briefly specified on pages 183-184. Two of those external risks were at full length presented to the Austrian party within Trialogue</p>
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	<p>Estimated radioactive effects resulting from the both reference accidents with releases into the atmosphere lack the major information (such as the exact source term), to be considered trustworthy.</p> <p>The observed reference accidents include the data on assumed dosages at the borders of Germany and Austria. For heavy accidents no specific information on Temelín concerning potential impacts on neighboring countries were handed over, in spite of the fact they were asked for many times (see the chapter 4.3).</p>	<p>(topic No 2 – gas pipelines, topic No 7 – seismic risk) and it was documented that the power plant safety is not at risk. It is similar in case of risk of an aeroplane crash. With regard to the extent of the EIA report, it was not possible to provide all detailed materials and records, and many of them have been handed over to the Austrian party within bilateral discussions and Dialogue.</p> <p>The reference accidents are described briefly, including the indication of a source element (the coolant activity, activity under the fuel cover) as a result of the limited extent of EIA Assessment. Details are given in safety reports.</p> <p>Results of the calculation for emergency sequences with the probability higher than 10^{-7} in a year are given in Table 6. The results given in Table 6 are related to the implementation of immediate (short-term) protective measures (shelter, iodine prophylactics – 2 days, evacuation – 7 days). It means that these measures need not be implemented in the distances where the upper limits of the interval of the intervention level have not been exceeded – i.e. in the distances where the dose is higher than 50 mSv for shelter and iodine prophylactics and than 500 mSv for evacuation, which is a distance shorter than 5 km from a source for all immediate measures. It does not mean that the protective measures cannot be, depending on the extent and development of the given accident, taken even for the lower values of intervention levels. However it is not justified to take the action for the doses under the lower limit of the interval, i.e. the values lower than 5 mSv for shelter and iodine prophylactics and 50 mSv for evacuation. It is obvious from Table 6 that these values will not be exceeded</p>
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		<p>in the distance longer than 35 km from a source (with the exception of V sequence) for shelter and iodine prophylactics and 5 km from a source for evacuation, i.e. the radiological consequences leading to implementation of <u>immediate</u> action do not exceed the border of our state for the sequences complying with the given criteria and requirements of the Czech legislative.</p> <p>The effective doses have been of course calculated for all considered sequences not only for the period longer than 7 days, but also for longer distances. To illustrate this, doses for the individual exposition ways for 7 days and for 1 year are given in Table 7 distance of 80 km. It is obvious from Table 7 that:</p> <ul style="list-style-type: none"> - the dose is changing with distance only slightly, which is the consequence of the already mentioned conservatism in selection of the weather stability and especially the result of the conservative scenario of the event – it is assumed that the radionuclides of the contaminated substance at a high temperature would wing in the height of about 300 m and they will be further spread without being scattered. With this unrealistic assumption the narrow "cloud" contaminated by radionuclides will irradiate territorially a very limited area – the scenario is much more probable that the contaminated air substances will be scattered and so reduced the input of a dose with distance. In case of rainfall the local contamination rate of the terrestrial surface will increase, but the dose will be significantly reduced with the distance. - apart from the conservative approach in the selection of sequences, selection of parameters characterising the conditions for spreading of radionuclides (the most unfavourable weather category), another significant conservatism is included in the technological scenario of
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		<p>the given sequence. It may be seen particularly on the V sequence, being the most important from the point of view of criteria. It is assumed here that a chain of events will start, which will substantially make the situation only worse, although there are means which can prevent this. However both the assumption that the operational personnel totally fail performing any manipulations and the assumption that a total station blackout will take place on the premises of the Nuclear Power Plant Temelin is maximally unrealistic. The arrived event borders then on with the above mentioned probability of 10^{-10}/year in a direct combination with generation of the initiation event. It is necessary to realise that the given type of initiation event is possible to be managed without imposing risk on the fuel integrity, using the prescribed emergency procedures which are regularly trained by the personnel of the Nuclear Power Plant Temelin on a full-range simulator. The operator, who would not prove the ability to solve the given initiation event correctly, would not be given a licence.</p> <p>In the case of managing the emergency condition this is a type of event which is presented (including its radiological consequences) within PoSR, where it is proved that this event will not cause any harm to the population of a foreign state. Comparing the PSA results for the Nuclear Power Plant Temelin for the initiation event of station blackout, with similar analysis of other western projects, the comparison is very good for the Nuclear Power Plant Temelin for the reason of a higher number of independent sources of alternating power supply.</p> <p>➤ Comparing the exposition ways for 7 days and for 1 year for V sequence, it is confirmed that the total exposure at distances longer than 10 km is caused more than 70 % by</p>
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	<p>The final conclusion claims: "The assessment of radiation impacts and selected reference samples of the NPP Temelín shows that even when conservative viewpoints are used, the cases of endangering the health of the CR inhabitation or the inhabitation of neighboring countries such as Austria or Germany, are out of the question." The recommendation states a too high level of conservativeness of the calculations, and clarifies the "best-estimate" calculation. However:</p> <p>The term "endangering the health" has not been clearly defined.</p>	<p>exposure from a cloud. The values of the effective dose for 7 days themselves reach not by a long way 50 mSv which is the lower limit for considering the evacuation (i.e. the measure will not be implemented) and the upper limit for shelter and iodine prophylactics. Considering the above mentioned highly improbable leakage characteristics (a narrow consistent belt of expanding radionuclides), realisation of both shelter and iodine prophylactics is practically unjustified.</p> <p>➤ Yearly doses for V sequence do not exceed the value of 50 mSv either. If their realisation were to take place, monitoring of the specified area would be the only justified measure, less probable would be then the territorially limited checking of food chains.</p> <p>In the conclusion it is necessary to say concerning the questions mentioned at the beginning that the beyond design accidents will be subject to further bilateral professional discussions depending on interconnection of monitoring networks and tuning the system of mutual information in case of a radiation accident.</p> <p>The term "health risk of population" has been used in the common sense and means exclusion of early health consequences and extremely low occurrence of late health consequences as an effect of exposure. Compliance with the dose criterion (50 mSv in 50 years) excludes the occurrence of early (deterministic) illnesses. To assess the late (stochastic) effects, the value of a collective dose is used, which has been calculated for various combinations of the wind directions, wind speed, weather category etc. It may be derived using the risk factors that the extremely low occurrence of late effects may take place.</p>
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	<p>Keeping of no matter how continuously defined limit dosages has not been proved. As a result of a dosages calculation only a chart, not even mentioned in the text, is assumed. The graph does not show any convincing expression of the calculation of curves, and there are no signs of them being the conservative values.</p> <p>Many aspects of submitted emergency plans invoke a suspicion that the offices in the CR perhaps count on possible effects of a large scope catastrophe that might potentially endanger human health.</p>	<p>Detailed results of the assessment of radiation consequences of design accidents are included in safety reports. Compliance with the defined limit values was verified by SONS, the independent authority of the state supervision, that issued relevant decisions on the basis of that. A diagram for calculation of doses for two reference accidents specified in the Assessment has a mainly demonstration character. It is a conservative case from the point of the source element as well as of the exposure outside the nuclear power plant. Details are given in the safety reports again and they could not have been included in the EIA Assessment due to the shortage of space. It results from the calculations that the individual doses on the border with the neighbouring states are approximately lower by two orders than the highest doses on the territory of the Czech Republic. Collective doses valid for neighbouring countries have not been calculated for two reasons – demographic data were not available and it is not recommended to calculate doses for long distances because extremely low values (doses) are multiplied by extremely large values (number of population) and the results have no practical sense.</p> <p>The extent of the emergency planning zones corresponds with the extent of typical accidents on nuclear power plants. The doses for the population of neighbouring countries will not require any implementation of the emergency plans, which is documented in the Assessment.</p>
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Table 1

Nuclide	Design effluents from NPP with 2 units at operation
³ H	2.5E+13
¹⁴ C	1.4E+11
²⁴ Na	8.9E+05
⁴¹ Ar	2.1E+12
⁴² K	2.1E+07
⁵¹ Cr	4.2E+05
⁵⁵ Fe	1.8E+05
⁶⁰ Co	1.1E+04
⁶³ Ni	1.4E+04
⁸⁵ Kr	2.4E+14
^{85m} Kr	1.9E+12
⁸⁷ Kr	1.9E+13
⁸⁸ Kr	5.0E+13
¹³¹ I	7.5E+08
¹³² I	1.7E+08
¹³² Te	3.2E+06
¹³³ I	1.1E+09
¹³⁴ I	9.0E+07
¹³⁵ I	6.1E+08
¹³³ Xe	1.2E+15
^{135m} Xe	2.5E+11
¹³⁵ Xe	1.9E+13
¹³⁸ Xe	1.3E+11
¹³⁴ Cs	3.9E+06
¹³⁷ Cs	9.1E+06
Total	1.6E+15

Table 2 – Iodine effluents

Year	Limit [GBq/year]	Actual value [GBq/year]	% of limit
1995	440	0.0147	0.003340909
1996	440	0.1221	0.02775
1997	440	0.0111	0.002522727
1998	440	0.1081	0.024568182
1999	440	0.0114	0.002590909

Diagram 1

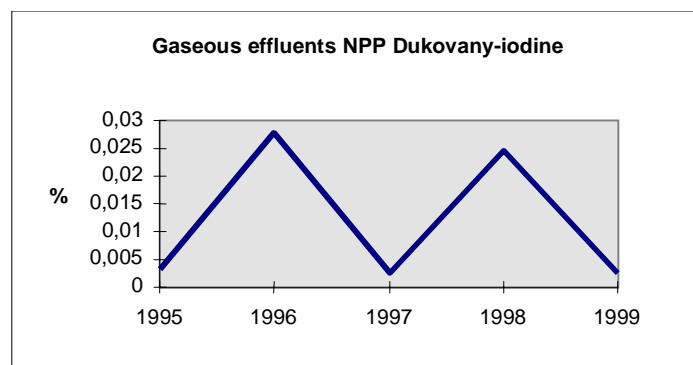


Table 3 – Effluents of aerosols

Year	Limit [GBq/year]	Actual value [GBq/year]	% of limit
1995	180	0.134	0.074444444
1996	180	0.08401	0.046672222
1997	180	0.2441	0.135611111
1998	180	0.0792	0.044
1999	180	0.0838	0.046555556

Diagram 2

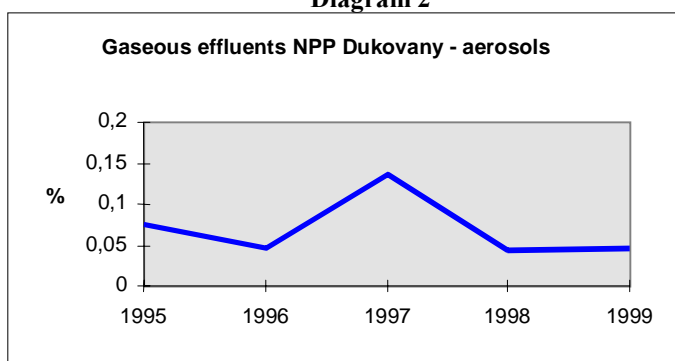


Table 4 – Effluents of inert gases

Year	Limit [TBq/year]	Actual value [TBq/year]	% of limit
1995	4100	5.846	0.142585366
1996	4100	3.164	0.077170732
1997	4100	0.417	0.010170732
1998	4100	1.403	0.034219512
1999	4100	0.618	0.015073171

Diagram 3

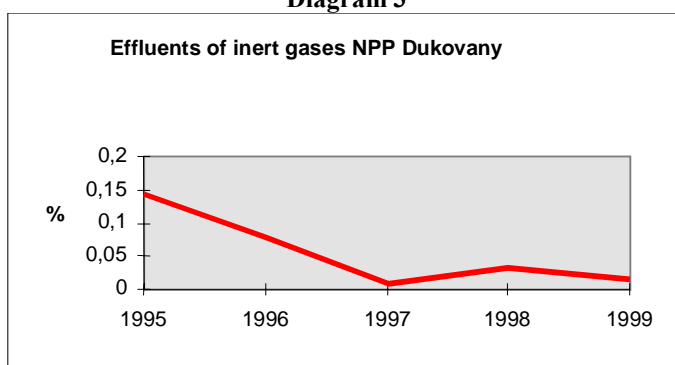


Table 5

Year	Limit [$\mu\text{Sv}/\text{year}$]	Actual value [$\mu\text{Sv}/\text{year}$]	% of limit	% of natural background
2000	40	0.0959142	0.23979	0.005328567

Diagram 4

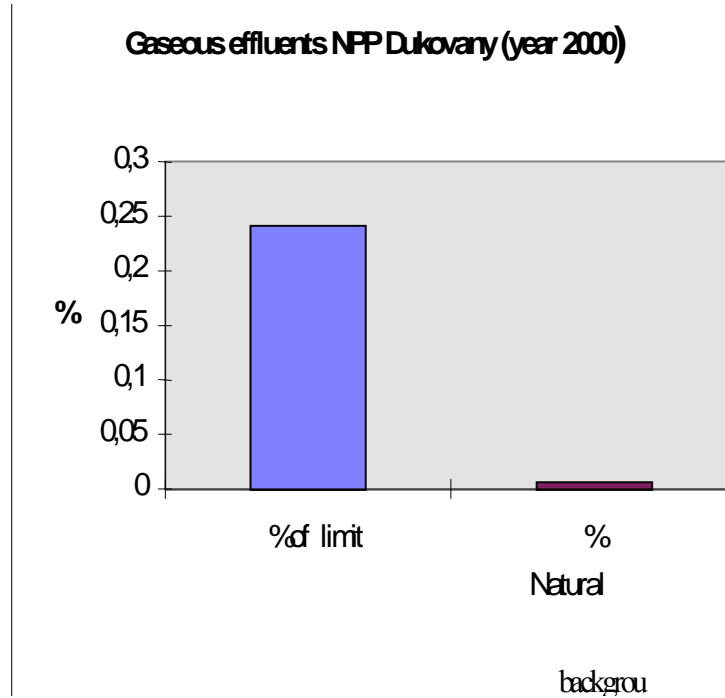


Table 6: Results of calculations for selected accidents

Weather category F						
Sequence	2 days			7 days		
	Intervention level			Intervention level		
	5 mSv	10 mSv	50 mSv	50 mSv	100 mSv	500 mSv
AB_01	8 km	5 km	<1 km	1 km	<1 km	<1 km
AB_02	14 km	8 km	2 km	2 km	1 km	<1 km
AB_03	18 km	11 km	3 km	4 km	2 km	<1 km
AB_04	16 km	9 km	1 km	2 km	<1 km	<1 km
ST_V	>40 km	>40 km	<1 km	<1 km	<1 km	<1 km
ST 1*	35 km	23 km	2 km	3 km	2 km	2 km
ST 1**	35 km	17 km	5 km	5 km	3 km	2 km
ST 2	<1 km	<1 km	<1 km	<1 km	<1 km	<1 km
ST 3*	27 km	19 km	2 km	2 km	2 km	<1 km
ST 3**	21 km	14 km	2 km	3 km	2 km	<1 km
ST 4	<1 km	<1 km	<1 km	<1 km	<1 km	<1 km
ST 5	5 km	2 km	<1 km	<1 km	<1 km	<1 km

Table 7a: Effective dose E (Sv); Sequence V, 7 days, weather category F

X [km]	Cloud	Deposit	Inhalation	Total
1.0	1.1 - 02	3.4 - 03	1.8 - 03	1.7 - 02
10.0	1.5 - 02	1.2 - 03	6.2 - 04	1.7 - 02
20.0	2.4 - 02	9.5 - 04	4.6 - 04	2.5 - 02
40.0	3.2 - 02	8.6 - 04	4.1 - 04	3.3 - 02
60.0	2.8 - 02	8.2 - 04	4.0 - 40	2.9 - 02
80.0	2.4 - 02	8.1 - 04	3.9 - 04	2.5 - 02

Table 7b: Effective dose E (Sv); Sequence V, 1 year, weather category F

X [km]	Cloud	Deposit	Inhalation	Total
1.0	1.1 - 02	2.9 - 02	2.3 - 03	4.2 - 02
10.0	1.5 - 02	1.1 - 02	7.3 - 04	2.7 - 02
20.0	2.4 - 02	8.5 - 03	5.3 - 04	3.3 - 02
40.0	3.2 - 02	7.9 - 03	4.8 - 04	4.0 - 02
60.0	2.8 - 02	7.7 - 03	4.5 - 40	3.6 - 02
80.0	2.4 - 02	7.7 - 03	4.5 - 04	3.2 - 02

6. Comments and suggestions risen in the public hearing in Vienna on June 26, 2001

(The text corresponds with the audio recording and technical constraints)

Written entry of an audio record of the public hearing

.... Interruption, strong noise in the crowd....

Just two minutes, one, and then we can begin... I will just say something shortly... I said without delays...

Attention please, attention! There is again the Vienna Federal Police Headquarters! It's a third and last call to end the unpermitted rally and clear this hall for its participants....

...shouting, chanting...

(Dr. Streeruwitz) I would like to ask you to return to your places. We will continue. I think we all are sorry this interruption happened and was necessary, because I think we all believe that this is not the right form of discussion and presenting differences in opinions relating to the Temelín project by weighty arguments. We respect that groups of activists not sympathizing with this action show their protest outside the building. I think this situation is very sensitive as it was very clearly shown by Mr. Kohout's statement. I believe getting further in the matter of Temelín is only possible by arguments. By deputy of the Austrian Federal Government, an opinion was elaborated, dealing with the most serious issues relating to the documentation received from the Czech team. That's our way of realising the serious discussion pertaining to this opinion and issues significant for Austria. Again and again, I had tried to pass this experience to the activists and explain that this hearing is just one of many steps in the whole process that is far from ending. Whistling is not the right method. After the Melk report we also initiated the discussion on safety on the EU level. It's nothing new for the Czech team. It pertains to the fact that Austria urges very credibly not to bring the power plant into operation. We did the same with our Zwentsdorf power plant and I think, no one in Austria feels bad about it now. We are not trying to threaten the Czech team, just to emphasize the fact that we would like to have a serious discussion and that we are credible in this matter. Aside from this, however, for all cases that can arise in the future, we have to put serious questions and exchange information with the Czech team and if a constructive discussion is possible, with all political groups and non-governmental organisations in this country. I hope that now we will be able to implement the hearing in its enfeebled form and settle and discuss the matters that were discussed by the Czech and Austrian team. I will now give the word to the spokesman of the government of the Czech Republic, **Dr. Rouček**, to say his opening statement. Then, **Dr. Kienzl** from Bundesamt will have the word. He will moderate with his colleague **Mr. Doubrava**. It will concern the technique of contributions to discussions and the like. Thank you.

Ladies and gentlemen, dear guests, dear friends! Even though the Czech team is not the organizer of today's hearing, first I would like to express my regrets over what happened here in the morning thanks to intolerant protestors. But please let me begin my opening statement from a completely different end. The one that is often forgotten The end – or the beginning if you like – is that Austrians and Czechs have lived together in this area for over one thousand years as neighbours. As you know, for many centuries we even shared a common country. We lived side by side in one state. The newest history, the history of the 20th century, has shown that even the iron curtain, which lasted forty years, could not separate us. Immediately after its fall in 1989, Czechs and Austrians, Austrians and Czechs, found their way to each other again and the way is firm. Since then (and the statistics confirm that) our mutual trade has been actively developing, Austrian investment into the Czech economy has been growing, hundreds of joint ventures have been founded, cultural and environmental cooperation, cross-border contacts and the like have been developing. In other words, Austrians and Czechs became again and are becoming very good and close neighbours. I can say on behalf of the

government of the Czech Republic that the Czech team is genuinely interested to strengthen this friendship, these good neighbourly relations. For this reason, too, the Czech government decided (here I would like to mention that the decision was voluntary and above the framework of any international legal obligations) to put the nuclear power plant Temelín through a test of the impact on the environment. I do not know (and you probably do not either) any other country in the world, which uses nuclear power plants, be it Japan, United States, Great Britain, France or for example Finland, and which would take such helpful and above-standard step towards its neighbours, as the Czech Republic did towards Austria, and I believe that once all these emotions of anti-nuclear activists cease, Austrian politics and Austrian public will appreciate this helpful and I would say above-standard gesture of the Czech team. The Czech Republic belongs to the industrial countries that decided to operate nuclear power plants. This energy policy is agreed upon by the main political parties and there is also a massive and stable support of the Czech public. However, to operate a nuclear power plant or nuclear power plants does not mean that the Czech team is willing to put the destiny and lives of its inhabitants through risk. On the contrary, the operation of nuclear power plants, including the nuclear power plant Temelín, must meet strict safety international standards. If the nuclear power plant Temelín does not meet these standards – and the Czech prime minister said that very clearly in Melk – the nuclear power plant Temelín will not be put into operation. We fully understand and respect Austria's decision not to generate electricity in nuclear power plants. It's a sovereign decision of the sovereign Austrian state and the Czech team would never dare to question this decision. However, the differences in opinions on generating nuclear power does not in any case mean that both sides will not mutually negotiate this issue. On the contrary, as I have already emphasized, the best instrument for keeping and strengthening good and I would say above-standard neighbourly relations, founded on mutual trust, is honest and open discussion and honest and open communication. We therefore perceive today's hearing as another step in this direction. Today's public hearing (as its name says) is about the evaluation of impacts of the nuclear power plant Temelín on the environment. The report on these impacts, which by the way is available in German and English mutations on the Internet, was elaborated by a group of independent experts in the field of environment. Its members are here today to answer your questions. Even though today's hearing is not about nuclear safety, we asked representatives of the Czech State Authority for Nuclear Safety to come with us to Vienna and answer the questions pertaining to also so called severe accidents. And finally, also the leading representatives of the nuclear power plant Temelín and ČEZ [Czech Power Company] that operates this power plant, came to Vienna to this public hearing. They, too, are available to you today, ready to answer your hopefully critical questions.

I believe that despite the interruption that happened this morning, today's hearing will take place in honest and open dialogue willing to respect opinions and standpoints of each side, even if we can expect them to differ often. I wish to this Czech-Austrian dialogue and to the hearing itself – despite the mentioned interruption as I mentioned before – success and thank you for your attention.

(Dr. Kienzl) - Thank you for your opening words, I would like to present you the development of this hearing. You can hear German in the hall; our colleagues have simultaneous Czech interpreting through headphones.

Unfortunately we do not hear the question or comment... Czech and Austrian experts have tags with their names on clothes. With regard to content, there will be mainly two blocks. First of all the environmental issue, which includes also so called zero alternative – we will

hear a fifteen-minute report by a Czech expert and a fifteen-minute report by an Austrian expert, so fifteen minutes twice. We will then look at the problem of possible impacts of severe accidents, again fifteen minutes by Czech and fifteen minutes by Austrian experts. We have two hall microphones available for the questions from the hall. If you want to ask to speak, please raise your hand. The time of your contribution is limited to five minutes. You can see a red light next to the reading desk. When you start, I will switch the automatic clock, the green light will go on and after five minutes it will start flashing and I will ask you to end your contribution. Everything is recorded on tape, so that arguments are available. Issues that are discussed here today will be taken into consideration by the Czech commission in its document. So, I would like to ask you to say your name and the institution you're coming from before you start speaking. Now, I would like to ask Mr. Doubrava to shortly introduce himself. He is the co-moderator for the Czech team and he will moderate the Czech contributions to the lectures of our experts. Thank you.

Good morning, my name is **Doubrava** as you have already heard and I will co-moderate this meeting exclusively for the Czech team. I would also like to say I am sorry about the development in the beginning of our public hearing. I had the chance to co-moderate many negotiations, also about the Dukovany power plant. Many Austrian experts met me already; I also moderated the public hearing in České Budějovice. I am very sorry a constructive dialogue was not made possible here. Although the main subject of today's public hearing is the impact of the Temelín power plant on the environment, the Czech team, as you already know from the previous contributions, is ready to answer your questions including those that do not directly relate or do not relate at all to the environment. They will, however, be shifted to the end of the first block. Questions that relate to nuclear accidents, over-project accidents, will be placed to the second block after a short break. Please let me introduce you the main representatives of the Czech team, the Melk commission workers, who – together with their colleagues – are responsible for the elaboration of this report. So, I am introducing dr. Martiš, dr. Hanzlíček, dr. Macháček and prof. Říha. As you can see there are many Czech experts. They will introduce themselves before making speech (if any). Their time will also be limited to five minutes, unless I make another agreement with dr. Kienzel. Our goal is to discuss today as many questions as possible despite the time limitation. I therefore ask for short questions and short answers. Thank you. Thanks. Let's start with the first part.... Unfortunately we cannot hear the contribution from the plenum.

My name is Streeruwitz. I speak on behalf of Minister Molterer who is presently on the Council of Ministers' session. Thank you. Let's start with the first block: "the environment" and the so-called "zero alternative". I would like to ask **dr. Martiš** who speaks for the Czech team for his contribution.

Good morning ladies and gentlemen,

A little louder, thank you. Mr. Martiš, can I ask you to speak? We can continue.

... was enhanced by the issues of radiation, in consultation with experts around the EUROATOM agreement. The scoping list included and respected the contributions of our Austrian colleagues and advisers from the European Commission. This stage, the preparation of the range and content of evaluation was very valuable for us, since it enabled us to get familiar in detail with the requested structure within the framework of the European Union and let us lead discussions with our colleagues from the neighbouring countries, so that we could verify our abilities to discuss problems together. It concerned quite an extraordinary problem. You sure understand that it is above standard to evaluate the influence of the Temelín power plant, construction that is almost finished and technology that is under control. From this view we approached this whole work. It is true that our experts could

draw from a rich history of the research of nature, impacts on human health, buildings, dwelling complexes. As you know, the nuclear power engineering and the environment have existed in the Czechoslovak and Czech history for over 40 years. We have much experience from this period – both positive and less positive. We have therefore closely watched the Temelín issues. In the last 20 years, Temelín itself, its construction and technology went through many modifications. Its history was very complex. However, it was documented by many studies concerning impacts of this construction and its changes on the environment. However, we find very beneficial that in the end a complete judgement of the present state of the power plant was elaborated, which fully employed the collected data and was able to update this data in considerable depth and compare them with data from other countries. It took approximately half a year. We are still in the process of concentrating on the comments of our experts, German colleagues, and Austrian colleagues and discussing the subject. We believe that the judgement, in the form we submitted it for discussion, meets the scoping list, which we agreed on with Austrian, German and our partners from the European Commission. We are now evaluating all comments that we receive to this subject. The scoping list itself contains approximately 220 items. I would like to stop very shortly in key chapters of this outline and get back to the individual subjects with our experts in relation to your questions. The key problem for us was the issue of solution alternatives as we had to consider the history that lead to the present state of the Temelín power plant. You probably know that there were several public discussions in the Czech public over the energy policy in the years 1996-98. These discussions were published in detail and various scenarios of development were considered with these variants. Combinations of traditional sources with nuclear sources as well as the combination of alternative sources without a new nuclear source, without Temelín. After the election in 1998, the government discussed the material that inclined toward the B alternative from the original concept. Again, this concept was discussed in public and based on this concept the government made further decisions on Temelín. We as a commission came to the construction that is almost finished and technology that is being checked. However, we think there is enough space for your incentives. We believe that all comments and incentives, all criticism that would fall to our judgement would be taken seriously into consideration.

(I am sorry but we cannot hear. OK, we will fix the technical problem. We understood your comment and will ask the technicians to eliminate the Czech language from the hall and make the German a little louder.)

All chapters of the scoping list had to implicitly consider the zero alternative, otherwise we would not be able to assume an attitude to the current alternative. A different situation is in the area where changes already occurred. I mean changes in the landscape, banks of the Vltava River where the impacts are only now starting to show – it means chain reaction. As agreed with the Austrian team we negotiated the alternative of mothballing Temelín and not letting the operation start. These materials are also available to the public. As you know from the information released on the Internet, the most important factors that we evaluated in our EIA are the impacts on landscape, nature and human health. We are coming out of the fact that the issues of impacts on the air and climate are not risky, as well as the issues concerning hydrosphere. We let the seismic issues re-evaluate in detail again. An independent study concerning the radiation hygiene was elaborated. "Human welfare" is considered a very significant factor. We respect the natural human fear based in each of us. Fear that cannot always be explained by reasonable arguments. We studied in detail radioactive waste issues and issues of storage and we simulated very severe accidents during manipulation. This evaluation was also assessed as acceptable. In discussion we like to point out the comparison of the active state with the mothballing alternative. After a full-scale review of all issues and their detailed responding we came to the conclusion that in principle, the impacts of Temelín on the environment within the framework of the jointly accepted scoping list are negligible. At same time we are defining several measures concerning the environment, not the economy, since the economy is not the goal of our evaluation. We are formulating a whole scale of measures and conditions under which we expect Temelín to have no significant impact on the environment. Thank you for your attention.

Thank you dr. Martiš, I hope we managed to overcome the technical problems to a certain degree. Can you hear well? Not yet. OK, I would like to ask one more time the technicians to help us. Please increase the volume of the German translation in the hall. Thank you. Now, I would like to ask the Austrian expert Mr. **Herbert Lechner** from the Austrian Energy Evaluation Agency to speak. Mr. Lechner, please present your contribution.

Dear chairmen, ladies and gentlemen! I – as a member of the Austrian team of experts dealing with the environmental issues as well as zero alternative issues and other alternatives - would like to submit our evaluation of materials that have been submitted to us by the Czech team

for EIA. Because of time pressure I can focus only on the important items. I will start with the environment. The previous speaker already mentioned it, he actually spoke mainly about this aspect. In principle, in the area of environment there are two problems. First I would like to say that we acknowledge the effort of the Czech team to submit an (extensive) and sufficient amount of data. However, on the other hand I believe that already the previous contribution of my Czech colleague showed some drawbacks and deficits. It's not only the question if all items on the scoping list were formally elaborated with text, it's also the problem of the quality of its content. Here we can see general drawbacks in the very beginning of this investigation. Above all it's the fact that the materials deal mainly with investigation concerning normal operation. We believe especially accidents and their impacts on the environment must be considered. We can see it in the Espoo convention as well as in the directives of EIA as well as of the European Union. It means, even though the probability of this case is very small, possible impacts have to be considered and investigated, because they can affect large territories. Another drawback is that the whole chain of processes was not investigated, but it was limited to the operation. We do not understand why the documents contain statements as e.g. "the collection and disposal of fuel rods do not represent any danger to the environment". We believe that the whole process should be examined, from the manufacture of fuel up to its disposal. However, I would like to point out the drawbacks in detail. According to our opinion, it's the sphere of waste water; we have not found any statements here. Further it's the sphere of exhaust where we did not manage to track even the regular operation, I mean how this research was carried out. We also see significant drawbacks in the investigation of the environment and human health. There are examples, e.g. only the radius of 13 km was examined; however in the radius of 30 km there are cities. The drawbacks in the investigation of the current state are apparent. Important information about a certain health situation is missing, future monitoring is missing, we do not know what kind of notion prevails. Calculations of doses are not clear either. I think these two transparencies should show we are highly doubtful. Formal statements are not missing; as I said in the beginning we are puzzled by the quality of the content of this investigation. Now I would like to focus on one area that was not mentioned by the previous speaker and that is, according to my opinion, of the same importance as the environmental questions. It's the economy. What alternatives are here to be examined, what effects Temelín has with regard to economy. I believe our Czech colleagues and we can quickly agree on one thing, since there are Czech documents that support our opinion. We can agree on the fact that the Temelín nuclear power plant was a wrong investment. I am adding conclusions from the so called Mertlík's Commission. I am going to read now the main statement of this report: "Economic calculations for the Temelín power plant that include irrecoverable costs show that the investment was unprofitable". Unprofitable investment – I think this sentence will save us from the overall evaluation of this project. I think we can hardly contradict the sentences expressed by my Czech colleagues. What are the consequences of this situation? The incurred loss represents a burden for each Czech household of CZK 20,000 – 40,000. If you realise that an average family income is approximately CZK 6800, it means that a Czech household has to work three to four months for this project. Now it's the question of how to restrict this loss. Is the completion and activation of Temelín the most beneficial alternative, the most beneficial solution for keeping the loss as low as possible? The loss has already occurred, but we can make it even bigger. We have investigated five alternatives. Zero alternative, which means the situation without Temelín; alternative of activating Temelín, but exporting all of its electricity; alternative of activating Temelín without the subsequent export - electricity from the coal power plants would be used for households; alternative of not activating Temelín and using the Czech power production to cover Czech households without adjusting spare capacities; alternative of adjusting this capacity, which means approximately 1500 megawatts.

Let me say shortly what basic situation has been investigated here in detail. It is clear that in this study we did not count with written-off investment. We used official data from the Mertlík's Commission under the assumption that block 1 is functional without further investment (I will get to it later). We made a general simulation of the ČEZ power plant pact based on the coverage contributions of each alternative, as I mentioned before. Here are the results:

.....(according to the chart).....

Red is zero alternative, the contribution for coverage of the whole ČEZ power plant pact without Temelín. Here you can see the activation of Temelín, the whole production is intended for export. The coverage contribution is a little higher, by about 1%. In case Temelín forces other power plants out, the contribution is even lower. You can see that even the remaining solutions hardly show any difference in comparison with zero alternative. If certain adjustments are made in the domestic production structure, the results are even more favourable than zero alternative. As you can see, the expedience is approximately 1%. And all that under idealized conditions, i.e. conditions that are optimal for the Temelín nuclear power plant. Please see the ecological comparison.

.....(see chart)....

Zero alternative, SO₂, CO₂, radioactive waste. What will happen when electricity is exported from Temelín? No change for values SO₂ and CO₂, plus radioactive waste. If the electricity production in the coal power plants in Bohemia is reduced and Temelín is activated, the radioactive waste is naturally again here. Reductions are made, but with regard to economy the alternative is less advantageous. It is disadvantageous in comparison with the zero alternative. Ladies and gentlemen, as I mentioned before, this overview of economic contributions shows approximately 1% expedience of the Temelín nuclear power plant under idealized conditions.

Now I would like to show you the risks that are not fictitious, but real. First there are technical risks. We assumed Temelín to be functional without the necessity of any further investment. As a matter of fact, even the Czech documents show that the completion of block 1 and 2 will cost approximately CZK 2 thousand million. The negotiations concerning additional equipment count with approximately CZK one to four thousand million. Additional engineering facilities and machinery should cost approximately CZK 2 thousand million. That's all about investment.

As far as the operation is concerned, we are coming out of the assumption of 6 thousand hours. However, we have to keep in mind that in world-wide comparison of similar type facilities, of all of the Temelín type power plants, only 40% reach six thousand or more hours. 40% of them reach less than five thousand hours. It means risks that are not fictitious, but real. The risks in sales are real as well. We have minimum increase in domestic consumption. Electricity consumption in the year 2000 reached the level of 1990. The domestic structure was transformed and the information about a 5% energy consumption increase that we heard last time seem completely utopian to us. It cannot be seen in any other country that has similar economic potential as the Czech Republic. And even if these 5% are realisable or if it really occurred, the question remains if these 5% can be lucrative for ČEZ or if ČEZ can cover this consumption. The truth is that in recent years ČEZ has been losing its market. We were also closely watching export opportunities, the situation on the European market. Thus, we cannot speak only about the situation in the Czech Republic, we must also consider the free European market. There is spare capacity. The representatives of the power-station management, RWE, talk about a spare capacity of 50,000 megawatts. We have exhausted the capacities for transfer. If you want to transfer electricity from the Czech Republic to Germany, you will not succeed because there are already auctions and according to the VEAG and E-ON network operators, the transfer capacity has been exhausted. On the free European market you can therefore make prices lucrative prices only on the *spot market*, which means that you can only

use the lowest limit as the basic burden. There is further liberalization potential that will keep electricity prices down.

I am thus getting to the summary. From the standpoint of economy we do not see any economic advantages of the completion and activation of Temelín. Especially when we consider the above-mentioned risks. It would mean that the damage that Temelín already caused would only increase. There are high technical risks and risks on the market. We can see that the Temelín nuclear power plant favourable estimates arise only if the environmental situation worsens. The option that is being implemented here is the least ecological and contains nuclear risks. In this respect I hope to receive your responses today that have not yet been included in the documents. Thank you.

Thank you very much for your presentation, Mr. Lechner. Let's start with responses from Czech experts. I would like to ask you to separate the issues: first of all the environment, the chain of processes and exhausts in regular operation.

I followed closely Mr. Lechner's contribution. As for environmental issues, I would like to ask the commission members to respond the questions. As for economic issues I would like to ask Ing. Vobořil from ČEZ and the director of the Temelín power plant, Ing. Hezoučký who will talk about technical risks and the relevant questions. I will ask **Dr. Martiš** to respond the question of *scoping list* that deals only with regular operation. Breakdowns should be also included as well as Espoo conventions. Briefly and simply.

According to the *scoping list* we evaluate the whole technological chain in the nuclear power plant, from fuel delivery up to storage in in-process stores. We evaluate various states of accidents and we elaborated further situations, specifically leakage during accidents. The *scoping list* was compiled according to the European Union directives, considering the recommendations of Euratom. Espoo is not mentioned in this respect. The European Union directives naturally follow this convention, but we have remained within the framework of the European directives to EIA. I would like to add that neither Espoo nor the European Union directives use the term "accident" as you name it. It concerns a specific character of this venture and that's what we have focused on.

I thank you dr. Martiš and would like to ask **Prof. Říha** to speak about waste water.

Dear Mr. Chairman, ladies and gentlemen. I personally accept the responsibility for the waste water area. I would like to present you a more detailed overview. I was glad to meet my Austrian co-speaker. I want to say that the Czech original is on the page 68 to 71 and our numerical data are not questioned. But the concluding evaluation in the Austrian original is different than in the Czech original. That's a normal situation when the evaluation of environment is concerned. I would like to document this systematically. You will probably agree that in the beginning there is analysis. Analysis can be done in a highly qualified manner, each problem can be methodically repeated. If the specialists proceed correctly, they must come to the same results. This stage of analysis with regard to quantity, quality... can you increase the volume in the hall please..... I repeat it. We have documented the stage of analysis with reference to quantity, quality and by comparative analysis. If a stage of analysis can be documented objectively and scientifically, this does not apply to the second stage, in which synthesis occurs. We all have the experience of a personal factor in the second stage, of feeling the emotions and professional deformations. I would like to present you our experiment to objectify the issue as far as waste water in the Temelín nuclear power plant is concerned. I will try to depict favourable conditions on this picture, namely solving the problem of waste water that we discharge to our recipients. You know that in the upper reaches of the Vltava River is spread the large water reservoir Lipno that leads its minimum outflow in such a way that the risk of all waste water as well as the tritium discharge is negligible and lies way under the Czech as well as Austrian limits, even within the framework of international agreements. The data that concern the permitted flow of 1.625 m³/sec and other are the profiles under which reduction up to the marginal profile occurs by 2.9 %. Since I was asked to end my speech, I want to show you a the table that concerns tritium and solutions in Becquerels per litre in relation to individual profiles. We can see that our border profile with Germany on the Labe River has the values of four to five Becquerels per litre. My last words will be about the comparative analysis. In this area we have experience gained for the fifteen years of the Dukovany nuclear power plant operation. We were comparing the values permitted in Temelín with the Dukovany values and their real state in 1999. All radionuclides in relation to the permitted values are drawn at 2.3%. Thank you for your attention. Thank you prof. Říha, I would like to ask our Czech colleagues to strictly observe the five-minute time limit with the exception of cases, in which the Austrian team asks for a more detailed explanation. Now I would like to get to another issue that concerns the air pollution, **Dr. Hanzlíček**, please. Then Ing. Čečil will speak about

the thirteen kilometres long protection zone and monitoring. I would like to ask both of you to observe the five-minute time limit.

Dear Austrian friends, the key problem in the chapter "Air" as we mentioned here before, is the discharge of radionuclides into the environment. Exhausts can emit from the power plant from three ventilation stacks one hundred metres tall. Each block has one chimney and the third one is on the building of active operation. Regular continuous measuring was introduced. The relating monitors are still checked. The binding limit must not be exceeded. It is the value of effective dosage, 40 mikroSievert per person and year. Here the dosage of natural radiation from space and the Earth core is depicted, mainly radon gas. The annual dosage in the Czech Republic is approximately 1,800 mikroSievert. Despite the fact that the first block of the nuclear power plant was not activated yet, not even its test operation, the attention was focused on the measured levels. The measurement methods will be explained in detail by Mr. Čečil. I just have to say that the value of one thousandth mikroSievert was measured in the year 2000. That's three thousandths of the permitted value. Our measurements correspond to those of the organisation Global 2000, the measurement results of which were the same. We can therefore assume that under these limit values the Temelín operation will not differ, it will not differ from the Dukovany nuclear power plant values, which are way under the permitted limits. Before Ing. Čečil comes I would like to point out that the limit values for the Temelín nuclear power plant comply with the regulations valid in the European Union. In no way can we say that the radioactive material emission values of Temelín are three thousand times higher as is common for nuclear power plants. Unfortunately, because of this value, accusations have been made and articles written in the media. Thank you for your attention.

Thank you, Dr. Hanzlíček, for observing the time limit. I believe Mr. Čečil's contribution to our discussion will also be brief. Then Ing. Koc will present his speech and we will then analyse economic issues. We did not ask about the monitoring of the environment... can you please start with your response....

Good-day ladies and gentlemen, my name is Ing. Čečil. I would like to shortly complement Mr. Hanzlíček's speech. We can naturally mention fumes that are existing while observing all conservative and cautious standpoints. It concerns all impacts on the environment. We have been watching the decade of Dukovany operation, the complex similar to Temelín. The reactors are of similar type and we have no reason to believe the Temelín situation should differ from the documented facts in Dukovany. As far as gas exhausts into the air are concerned, the values reached in the recent five or six years are in the report. I want to speak about just one because the others are similar. In the year 2000, Dukovany use the 40 mikroSievert limit value per critically one person from the population only from 0.24 % of this limit. In comparison with the natural state, this value is 0.005%. You can judge yourself if it is possible to measure it. As it was mentioned here before, completely independent organisations measured nothing. Thank you.

There will be two more responses to economic issues and then the audience and the Austrian experts can ask their questions. Please.

I will now ask Ing. Vobořil to speak about economic aspects.

Good-day to everyone (**Ing. Vobořil**), I did not think economic issues will take so much time here. I thought this matter should have been discussed on the ČEZ shareholders' General Meeting, which took place last week. I would like to quote from the conclusions of the so called Mertlík's Commission: "In case the new capacity is fully utilised, the completion is economically advantageous for the energy production. In case this electricity cannot be sold on the domestic or foreign market, the completion is not economical." These are the Mertlík's Commission conclusions, however, if you think about it, it applies to every project. When it cannot be sold, it is not economical, when it is sold, the project is economical. You can see here the development of the energy consumption in the Czech Republic in recent years. In the background you see this grey zone: these are scenarios of so called *least cost study* that was made out in 1992 and we are getting back into this zone.

...chart...

In the year 2000, our demand was at the level of 52,3 terawatthours. It means we are not afraid the energy demand in the Czech Republic would not increase, mainly if we consider our position in the consumption per person compared with other countries. For example, the consumption is 27% lower compared with Austria. I would also like to speak for a moment about actual economic issues. The current situation looks like the power plant is nearly completed, almost no funds from the investment budget will be saved. This nuclear power plant is characteristic by very high investment costs and negligible running costs. The running costs are as follows: I have a new car that should last 30 years. Its consumption is half the old one, which I can still use for another 15 years. But I can only keep one of them. Of course, the result is clear. I do not know how the Austrian team

reached the conclusion that Temelín burdens each household by CZK 40 to 60,000, because Temelín is not funded from taxes, but is paid for by the energy bills of our consumers. I would also like to add that these consumers are sought not only in foreign countries, but also in the Czech Republic. I heard you say that if all Temelín electricity is exported, the environmental burden will not be lessened. Please, don't get upset, but I do not understand it, since this electricity would be produced from a nuclear source, which means no exhausts. If it was to be produced from a different source, either in the Czech Republic, Austria or anywhere abroad, these exhausts would surely burden the environment. Thank you for your attention. I think I had responded to all questions, I can complete them if necessary.

Thank you, Ing. Vobořil. I will now ask the last person from the Czech team, the Director of the nuclear power plant **Ing. Hezoučský** to deal with the technical matters voiced by Dr. Lechner.

I would like to react to Dr. Lechner's words about the planned additional equipment and certain technical improvements that should cost thousands millions Czech crowns. I want to say that the technical equipment in Temelín is completed. Investment means used for these purposes are part of the published budget. They do not represent any extra costs. The same with the funds needed for the turbo generator repair and its subsequent building in. These costs are not included in the construction budget. They will be paid by our contractors, since the mistakes are theirs. ČEZ naturally orders functional devices. If the time permits I would also like to mention some technical problems. I wish I had more time than five minutes because many rumours and misunderstandings spread around the Temelín technical problems. We do not always have the chance to explain the situation. I would like to add that we are very satisfied with the operation of the so called nuclear part, which has functioned faultlessly. The same applies to the *information and control system* delivered by Westinghouse. It is reliable. Functioning of the electronic systems is also faultless. The only problem is that we had to put it several times quickly out of operation. However, there weren't so many shut-offs at that time. They were caused by the secondary or classic circuit. The turbo generator could not have been tested before operation, because there isn't such a strong source of steam anywhere in the Czech Republic. So, we could have expected certain problems. These are technical matters, but I would like to assure you, we pay great attention to them. These problems do not really represent any danger to anyone. We discussed our problems with several foreign suppliers, they all experienced troubles when starting to operate a machine of such magnitude. We may have started to look into the problems too late. However, not only have we studied the literature, we have also consulted the issues with many experts. One of them is present here today. It's Prof. Pahr from the Zurich Technical University. He will explain the situation with appliances of similar magnitude. Thank you.

Thank you very much. All economic questions have not been answered yet and some new ones appeared. I would, however, like to ask the public now to put questions. I have calls to speak, first please Dr. Rauter in the fourth row.

Please try the hall microphone; it should be OK now.

My name is **Herbst** and I would like to speak on behalf of the federal state Lower Austria. Lower Austria uses the possibility to enter the dialogue with the representatives of ČEZ and the Czech government. But I have to say the discussion seems rather strange to me. I feel both parties speak alongside without making any dialogue. In the beginning, Mr. Lechner explained his opinion of economic consequences in detail, but no one has reacted yet. Each EIA investigation must specifically state the impact of a concrete project and also – and I am missing this – evaluation and alternatives (if there are any better). From an economic standpoint as well as from the standpoint of the environment. As Mr. Lechner explained in detail, we must also count with an additional investment into Temelín. An outside observer that saw the whole liberalisation process in the European Union and how these investments will be solved, if the Czech Republic asks the European Commission for some support in this case. That would be an interesting response, one we have been waiting for so long. Above all I would like to ask for the alternatives and ways of their testing. When we went through the documentation, we did not understand this subject at all. I think if a similar investigation is conducted in Austria or any other country in the European Union, these documents would be returned. The whole documentation would have to be made over and all this would have to be

properly proved. I am not trying to say that the whole project is failing, but such documentation is completely unclear. Thank you.

Next is Ms. Schmitz. Excuse me.

I accept your apology. I would like to ask where Mgr. Molter is, whom I know as a very responsible, valuable politician engaged in politics for many years? Like I also know you as an opponent of nuclear energy. Here in Austria was also Joseph Regner with his eco-social market economy and the like. I will introduce myself to all those that unfortunately sit behind me, I am **Dr. Elizabeth Schmitz**, Neuharting, a nuclear energy objector from the very beginning, as you know, I was born in 1929. I would like to say that it is crazy to speak about safety in the case of Temelín, if we consider that plutonium half-life is 24,500 years. I had to run into the debt of 740,000 schilling, privately, to "kill" the Zwenkendorf nuclear power plant. Because we were told over and over again that nuclear energy is the cleanest, the best, and the safest for countryside women that have no electricity, they would all have washing machines... And they invited this terrible Dr. Elizabeth Schmitz in person to travel through the whole country, because unfortunately my ex held a very high position and we were a famous family. Had they convinced me, everything would have been different. But my red – white – red banner read Malis (?) – maybe you remember from the Schwarzenberg Square, he shivered more before me than before his son at the ball rehearsal in Opera, "No atoms – death for Austrian children!". And I say the same applies for children in Czechoslovakia and Slovenia, please go to Kiev, you experts! You who – despite the Kiev hospitals dare to promote the activation of Temelín! After we all warn against the horror, which now is anyway in apocalypse. In the Ukrainian means Chernobyl, even though someone from the audience here chuckles, the prouder I am. St. John was not the worst prophet when he wrote 2000 years ago: star as a torch fell from the sky and its name was "Vermut" which means Chernobyl in Ukrainian. Terrible rain fell on Austria two days later, it means that until now all the mushrooms, forests and berries have been poisoned! By radioactivity! That's a terrible crime on humanity,... nuclear lobby of Mr. Fredericka Hacker (?), founded because of a bad conscience. It was he who invented hydrogen bomb and has to answer for Hiroshima and Nagasaki. Mr. Kreisky invited him in emergency to fight against me. We conducted our duel at the university and Mr. Peter Kreisky and Usershavechap kept attacking me, but it has to end now! Today we are responsible for all children, all coming generations. A man - whose name I just forgot -spoke brilliantly. He was from the Austrian Environmental Evaluation Agency, and he received recognition. Tell me, professors, and scientists, where is the final store of the nuclear fuel? Answer the question responsibly to me, mother of five children who is not quite well now as you can see, after a terrible fall in Moscow, beside other things. I have seven grandchildren and they are all as hard as nails. Do you – experts – want to have grandchildren? With two heads or totally deformed by degeneration caused by plutonium, and dying by tragic death? Answer my question of a final store for nuclear waste!

We recorded the question, now we have eight people wanting to speak, next please you in the third row.

(Mrs. Wenisch) I would like to express my opinion of two items and I hope to receive answer from my colleagues from the Czech Republic. You explained somehow our question concerning waste water. However, we believe that its evaluation in your own documents contradicts itself. On one hand you rate exhaust in waste water as scant and unimportant, however, at the same time you say that in a long run you may want to implement monitoring of waste water impacts. At the same time you are talking about minimum impacts. You keep

explaining again and again that you can obviously state exhaust, maximum and very conservative calculations. In your documents you keep comparing with Dukovany as far as water pollutants and air exhausts are concerned and you keep showing us the enormous differences between the permitted and real values. In the case of Dukovany it is confirmed by operation and measurements. On the other hand we cannot trace it down in your Temelín documents, you do not indicate the overall annual exhausts, the procedure by which you reached the conclusion of not exceeding the limit of 40 mikroSieverts per person is not clear to us. There are no calculations or initial data for these calculations. However, you want us to adhere to your evaluation, which comes to the conclusion that the environmental impacts are very small. There are problems and I would like to urge you strongly to try to make these things clear and transparent. I also believe that your method of reducing exhausts is not really transparent. You do not state any annual exhausts, but you measure radioactivity of various pollutants in stacks. You also measure overall exhausts and tritium pollutants in water. You also explain that the exhaust limits are not set by the measured values of pollutants, but by doses that will get to the population, by the rate of annual dose. It does not seem integrated and you should explain how it works. We are still talking about calculations permissible under Espoo and how to reach these conclusions. But I am more interested how can you put it in practice. However, I still believe that hazardous values, by which intervention is necessary, are derived from exhausts and values of pollutants, not by means of some calculation programme, I can't imagine that. Yes, thank you.

Thank you, please introduce your self always in the beginning. It is necessary for our record, thank you. Next is Mr. Hofer.

My name is **Hofer**, I am from the Risk Research Institute. I would like to shortly explain a misunderstanding that came out during the discussion. The EIA documentation itself did not deal with severe accidents, at least not clearly. It deals with three reference accidents occurring in the safety testing operation. They became part of the final EIA evaluation. That's the reason why calculations for the case of severe accidents were discussed and further materials were submitted. I do not understand the statement that severe accidents are part of EIA evaluation. Thank you.

Thank you, next please the Ambassadors of the European Parliament, Ms. Fleming.

Thank you. **Marielies Fleming**, European Parliament. First of all I would like to thank the ladies and gentlemen that came to us from the Czech Republic to learn democracy here and see how it works. Besides that I would like to congratulate the Czech Republic on its president, who I truly respect. He explained himself clearly against the activation of Temelín. Please allow me few comments on the economic issues. Is it true that almost all the energy produced in Temelín is to be exported and the prices the Czech population must pay are much higher than those for export? Is it clear to you, ladies and gentlemen, that if you were in the European Union, you would get into the liberalised energy market and in no case you would be able to ask the price you are to ask today? Your electricity will be good for nothing. And please let me ask the last question. I am the member of the European and Czech Parliament Commission that should prepare the admission of the Czech Republic. When you talk privately with your colleagues, they tell you the plain truth. They know that Temelín is a hangover from the communist era and they would be happy to get rid of it. Please help us find some solution that will enable us to save our face. I think we all should try that. Thank you.

Mr. Lechner in the second row. We don't have much time, but you can use transparencies. I would like to get back to the ČEZ standpoint of economic issues. Additional, irrecoverable costs. In the Mertlík's report you can find these sentences: "And we investigated both, we have both aspects. After calculating all costs we came to the conclusion that the investment is not economic. It's a bad investment." In our assumptions we have also touched an aspect you mentioned before. Until now the expended costs were not counted with. In spite of this fact I showed you there will be 1 % productivity for coverage. From all the risks I have mentioned. I believe this is a base for discussion, but I am missing an analytical approach of ČEZ. The arguments are sketchy and individual parts do not fit together. I do not believe a Swiss professor will be of any help here. We need to have a joint discussion on the same basis, analytical basis. It also concerns the costs that will burden the Czech households. I have to say I felt really offended – when we come out of a wrong investment, who is going to pay for it? Of course, no money will be collected in households. They will pay through a high electricity price and lower income from privatisation. And when they say that the shareholders are to pay for it: the Czech state and Czech people are the shareholders who will indirectly pay for it. Speaking about additional costs, that's all.

Growth of energy consumption. This chart shows you that the electricity intensity in the Czech Republic is higher by the factor 3.5 than is the EU average. I think it indicates that the assumptions stated in the documents were not mentioned now, which is an indication of sketchiness and inconsistency. Such information is just utopian. You can see that if we follow from this rate of increase, the Czech energetic market is not ČEZ. The sales of ČEZ have been decreasing in recent years. It was artificially driven upward before 1996 in the area of electric heating and is now decreasing.

You have also not said how you want to export the amount of energy, I mentioned transport problems. You will build more power lines, what will happen? These costs will also be added to the project. I can see many drawbacks, which supported my opening statement. The economic area is not clear, much work must be done in order to make things clear. Not sketchily, as anyone wants to. Thank you.

Next question in the sixth row.

My name is **Blazek**. I live five kilometres from the Czech border. I am afraid. I wish there was no nuclear power plant. I want to ask what will happen in case of an accident. Has ČEZ prepared any safety measures for Czechoslovak citizens? Are there any nuclear shelters with food? How would it be organised? Because we will have to plan emergency procedures for schools. How will the organisation look? School would have to have shelters with food and beds. These are all hidden costs, which increase the inexpediency of the project. Because it will fall on us, on the municipalities. Will we get any money from authorities? I don't know..

Men in the fifth row, please.

My name is **Johanes Pietsch** as the previous speakers already said... it seems to me,... Consumers, citizens always bear the risk and the others get the income. We know this from Chernobyl. One has to really ask... the comparison with a car was mentioned here. It's like driving your car to the desert with an empty fuel tank and saying it will be fine. That's how I see it. Twenty, forty years of an endless store, for which there is no solution yet. No one counts with these undreamed-of costs. These are unimaginable problems that are not solved yet even in theory. One does not hear anything else that the final store has not been figured out yet. You cannot drive your car on the highway if you know that the next bridge has not

been built yet. And that's how I see this atomic mafia, sorry for the word. You burden us with the risk and leave in your car and do not think what will happen. It's a problem, sorry for that. Prosperity in our western industrialized world is always connected with the energy consumption. USA rejected Kjóto as unfeasible. It's an absurd game that's being played here. In our industrialized world that promises prosperity a new genetic technology comes that promises prosperity again. We lived through Chernobyl and we bear the risk, but we do not want any more. It does not matter what you politics or economists say, we do not want the risk! We have an area here that's uninhabitable for many thousands of years because of an accident that could have been prevented, based on Chernobyl. You cannot get us to safety, so many people cannot be evacuated. We therefore bear a great risk and do not want to. We citizens do not want to bear such a risk for such a small profit of such a small power plant – in comparison with the energy market. Thank you.
Thank you. In the third row, Mrs Saibertová.

My name is **Petra Saibertová**, Institute for Meteorology and Physics, Soil Cultures University, I am a member of the experts' board. I would like to start with a short personal remark, I've got the feeling that this morning's protests express a huge helplessness. I think that the task of the people who are to take decision later on is not to enhance this feeling. As for the part of a content. I would also like to come back to the issue of radioactivity transmission to the air. It is interesting that no emission limit has been defined in the Czech Republic, only a dose limit. However this is to assume that there exists a calculation procedure to calculate such waste value doses. But this fact is not quite apparent from the existing documents. And I would like to help particularly the following issues. A full list of emissions used for the calculation, by means of which the compliance of limit is to be proved, is the first. It means no comparison with any other nuclear power plant, but the values you have taken into consideration, we would like to see them.

The second issue is related to the models on which the calculations were carried out, in this, apart from other things, very unclear and unreadable report, two different models are mentioned. First model RDETE and then the NORMAL. And I am asking for the information stating which of them was used for what, by which they differ and why two different models have been used. Besides, I would like to know whether those models calculate only the individual defined meteorological conditions or whether the whole climatology has been used as a base, comprising the direction and speed of wind, stability class and precipitation rate. For which items such calculations have been carried out, it appears from the report that they were only four of them, namely 667, 1667, 5333 and 10667 metre distances. And it is also unclear whether all cardinal points have been taken into account. There is also a question how the dose is distributed. In addition, the collective dose is mentioned in the report, however a clear definition how it was exactly calculated is missing. It would be interesting to know what proportion of such a dose falls to the inhabitants of the Czech Republic and what proportion to the inhabitants of other countries. It is impossible to find any information about it either. Only in one place but I think it's related ... to anything else, it is stated there that it will be a few times lower abroad. Anyway, even this statement is not proved and I am asking for presentation of the calculations to show the dose value for example in Austria, Germany, Hungary, in Slovakia etc. Finally I would like to say briefly a few words about the waste water. The Czech commission emphasised always that the values are so low bellow the natural radiation rate that there is so much radon in the air, but only few radionuclides infiltrate through the chimneys of the nuclear power plant. However it is slightly different with the waste water because large amounts of tritium leak and such values exceed the normal values, i.e. the existing ones, although abnormal, many times. Why is this fact not emphasised either and why are not clarified its impacts? Thank you.

The next person to speak is Prof. Janouch for the Czech party.

My name is **František Janouch**, I am a physicist and I have been working as a representative of the European Union in Ukraine for last five years. By this opportunity I have had many chances to visit Chernobyl and I have carried out a number of projects there. Before I express myself to Chernobyl, I would like to say that once in my life I've seen a similar scene like today at the beginning of hearing. It was in 1975 when I was in China surrounded by the Red Army. They did not listen, they were screaming and were not able to lead a constructive dialogue. Now to Chernobyl. Chernobyl represents a big tragedy of course but it is one of the communism crimes which have been conveyed to us. Chernobyl used to be a military reactor for production of plutonium and it was a political decision to use this type of reactor for the energy production. This would not happen in any democratic country. I can tell you that not only four, but six reactors had to be built originally and additional four on the other side of the river. During those five years spent in Ukraine I came to the conclusion that the impacts of defects and damage to the environment are comparable in fact with effects of chemistry, coal power plants. I know that it sounds ridiculous but it is so. One of the ladies asked me what would happen with plutonium with the radioactive half-life of 24000 years. The problem connected to the dangerous storage of plutonium has been principally solved. The only problem is, which method will be cheaper, more suitable. As a physicist, I can tell you in addition that certain amount of work is being carried out on it and that very progressive methods of transmutation technology exist, which are able to split the plutonium and reduce the radioactive half-time in such a way. The highly radioactive waste could become an energy source again. It could be possible in this way. I want to say one more thing. Before I went to this conference, I had seen a programme of the Swedish Television concerning the issue of mercury from batteries. There are tonnes of batteries there and the state do not know what to do with them. The difference is that mercury stays and does not disintegrate. One of the alternatives to be thought about in Sweden now is to bury them to a depth of 500 metres for ever. I want, because I still have the floor, that I don't understand how the discussion about Temelin proceeds. Temelin is a modern power plant where it cannot happen what happened at Chernobyl. At Chernobyl, you are standing at the top of the reactor and you can see the surrounding landscape through a glass window. There are no safety measures at all. Now I'm nearly at the end, let me speak for another half a minute. When I was preparing for this hearing, I learned that the number of population increases by 250,000 people every day and therefore it is necessary to start one Temelin reactor every second day by standing consumption. Where do we want to take the energy for developing countries from? I back alternative resources but I cannot see any real possibilities how to cover these inefficiencies by means of alternative resources. Thank you.

Thank you, I've got now five persons asking for floor, we've got yours as well. We don't want bilateral dialogues, you may ask for the floor, or to discuss it later with my colleague. I would like to ask the Czech experts to answer the direct questions and I will try to ensure that those questions are answered directly. Mister Klener.

I would like to ask Prof. Klener to answer the questions related to the dose and health.

My name is **Vladislav Klener**, I am a medicine professor, I have been working in the area of radiation protection for many years. Questions related to health issues appeared in the discussion, also in the opening report. Questions related to the health of people within the thirteen kilometre zone are involved, but this is a misunderstanding, this is a protection zone

in case of a catastrophe, this is not an area where the state of health would be examined. The health state has been monitored here in the Czech Republic by means of a few registers, tumours and other problems are involved. From them, it is possible to monitor impacts of one or another aspect on the population. It is certainly true that certain initial studies have been carried out for this thirteen-kilometre area. Of course it is not possible to find differences there in comparison to reference data. But even for the future, this is not a sensitive indicator of the state of the nuclear power plant or of the health of population. The question of jeopardy of population may be assessed on other levels. Such as food, drinking water, air and others are involved, these may be also monitored. However it cannot be assumed that deviations will take place for those indicators. It means that the control of pollutants in water and in the air is the next level and from it the models which have been already mentioned here, the dose is calculated. I am not an expert at models, two of them have been used, EPA, which has been developed by the way for American people and takes account of the character of our population in all aspects. And also those were used where coefficients between the activity and dose are used. I think it is enough for now.

Thank you, have you got any additional questions to this? Microphone please.

Yes (**Mrs Wenisch**), the questions would be related to more issues, these models have not been apparently explained again, which is exciting especially for Mrs Saibert. Then you said that the surrounding area of thirteen kilometres has been thoroughly examined, but this is the only investigation which has been presented to us. You said that as for the control, there is nothing to be found at this moment but our question

Can you directly answer these questions? With microphone.

Of course (**prof. Klener**) there is a number of data at our disposal concerning the food chain, composition of the so called food basket and the concentration to the individual moments is a dose. I cannot give you any details now, they are included in the documentation.

If it is impossible to answer it here, then the Czech EIA commission will explain it in writing, on the basis of the today's discussion and written impulses. And Austria has another chance to come back to these issues during bilateral discussions. I am asking Mrs Marschalek as the next speaker.

I am sorry, I would only like to specify that the Czech party will not answer all questions in writing because the report itself has been already closed. But all impulses which have been mentioned here will be taken in consideration and all the arguments mentioned here will be taken into account in following decisions. It is something which is to be understood as our standpoint. All impulses which have not been answered here will be taken into account and respectively discussed among Czech and Austrian experts. No question will be missed.

Thank you for your explanation.

Mrs Marschalek. Anyway, I would like to ask a question. All the questions which have been asked here, when they will be answered and will they be answered at all? Because otherwise there is not point in asking. Could you give me an answer right now please.

As my colleague said before, the open questions will be explained and worked out in the standpoint of the Czech EIA commission and then presented to the Austrian government again.

And will the questioners ever learn about it? When and how will it be publicly presented?

This information, as well as all preceding information, we will make it available through the Internet.

Thank you, a few more words to my presentation. I really appreciate the involvement and contribution of Dr. Fleming, however I want to ask her urgently to adapt her presentations to voting of deputies of the national party in the European Parliament and not to prevent voting for renewable resources, against Euratom and withdrawal of Europe from the nuclear power engineering by her behaviour. Secondly, I would like to remind the Czech doctor of and also ask him whether he has ever heard the saying "even the fear leads to an illness". This factor has not been taken into account so far at the assessment of Temelin. And the consecutive costs also belong to the cost study. I miss there the assessment of the guarantor risk both from the Czech and Austrian part, or the cost for international atomic guarantee where the Czech party would also have to contribute. I miss the costs for civil protective measures which are casually connected with the project. I miss the cost for storage and the respective shut-down, which would be necessary from the technical point of view if the start-up was to take place. In addition, I also miss, or it is not clearly stated, how the certain economy in consumption could lead to the desired target to cover the consumption of the Czech Republic. I consider substantial to remark for Chernobyl, I don't mind how the Temelin has been construed, safer or otherwise else, I don't think that the Czech party is able to guarantee to be ever able to eliminate a human error. And the consequences are really bad even then.

Deputy Fleming, only a short response please. One sentence. It is your turn.

I agree that it might have caused confusion. The matter was that we did not voted for, I think it was probably the second day of our presence in the parliament at all, one "green" German deputy proposed the entire abolition of the Euratom Treaty. However our colleagues said to us that we would lose the right to get the information from the French, English, German parties about their nuclear power plants. This is also a part of the agreement. And we have resolved to raise amendments ourselves, some of them were for the change of Euratom according to our imaginations, but we want to stay informed. Because the French, English parties and for additional thirty years unfortunately even Germans have got nuclear power plants and we want to be informed. And we did not want to lose this information. It is my pleasure to take you for lunch, I'm inviting you, I will explain it to you there in more details. Thank you.

Please this is the very last sentence, then we will negotiate bilaterally.

Yes, only one sentence, not only Euratom and not only five years ago, also October 2000 is concerned when the Austrian National Party prevented measures on renewable resources in the European Parliament in two voting.

So, now bilaterally, **Mr Červený** is the next speaker.

Červený, in Vienna and in Czech slightly different but it doesn't matter. Let me shortly say thank you to Mr Kohout for his morning's presentation. I feel sorry about the events of today's morning. I would like to ask two content bearing questions, but I will ask the third one first. The question is, whether my two questions will be answered. The first question is directed to the ČEZ representatives: how expressly and when do you want to depreciate the existing investment in the amount of approximately 100 milliard Czech crown? A short and simple question. The second one: how do you want to increase the ČEZ market share, which fell so down in the

last year, to find distribution for two thousand megawatt, six thousand hours in a year. How will you make it and on which markets? I'll let you to answer it now but you won't succeed. You will never reach a five percent increase at home, you shouldn't bring the data only per inhabitant, but also for currency units, i.e. crown, shilling, euro. And the Czech consumption is approximately at 3,5 to 4 multiple of the average of the European Commission, or per one euro. It means that you would need to be allowed to multiply 3.5 times the gross domestic product without any additional increase in consumption to reach intensity of the average of EU. Where do you want to place additional two thousand megawatt in the country? And where abroad? Considering the poor capacity of lines, surplus capacities on the today's liberalised west-European energetic market. Where do you want to find the distribution, or if you find it, how will you succeed without any dumping?

Can any representative of ČEZ respond to these two questions - depreciation and fall of the market rate? It is your turn.

I would like to ask for one more thing, a number of questions have been asked here concerning economics and I would not like it to be only one-sided. The Czech party has not given any answer to the Austrian party so far, I would appreciate more space for **engineer Vobořil** for answering them. For the following approximately eight questions mentioned here.

I will start with the issue of cost amortisation. The cost has been used up. All we can do now, is to start up the power plant and gradually amortise the cost. Or, as the majority people, who are present here, probably wish, not to start up the power plant. And what to do with the cost then? We can lead academic discussions here and assess the project from the beginning again. But I would not like to lose time with it. We are in this situation today and it is still more reasonable to amortise the investment from the economic point of view.

If we look at the second question, the ČEZ market share. If we see the direction of the domestic market and look at all the reasons, we can see where all these reasons are. I am sure we succeed to slow down and reverse this trend this year. Because the resources we operate produce the energy cheaper than our competitors. The deputy of the European Parliament spoke about the export of current from Temelin. I cannot exclude that the numbers will be similar at the beginning. Temelin is established for thirty years. It is not the period of the next two or three years only. What price we get for it on the European market, this is another question. I do not want to see the liberalisation of the energy market demonstrated only in numbers of consumers if there is a fictitious alternative chance for the choice of a supplier. But to liberalise the whole free market in the whole chain indeed starting from the production because as our studies show, we are able to produce the current cheaper than in the west. It means that we are not worried that we would not find a market for our Temelin current. If we look at the current per a currency unit, it is of course higher in the Czech Republic. But nobody has asked so far whether it is caused by a high consumption or by a low added value, a low productivity on both sides. I am sure that we will analytically focus on the costs but this is the open hearing and the discussion of this kind, related to the trade secret data, is not the right place for it. I have also heard a question concerning the cost in case of putting the power plant out of order and the final waste storage. These will be accumulated during the operation of the nuclear power plant, it means that the today's operated power plant Dukovany places a certain contribution in the atomic fund for every kilowatt-hour and builds a reserve for taking the power plant out of service in such a way, now in the accounting, and with a new nuclear law presumably a real one. These costs are covered. I think it's all, I have not heard any more economic questions.

Prof. Krompf is the next person to speak.

Wolfgang Krompf, Vienna University, a physicist and risks research. I would like to turn to Director Hezoučský who I highly respect because the awareness of our side has significantly improved under his management in comparison with preceding years. And I think that it is also very positive that Director Hezoučský has always tried to lead the dialogue publicly. That we learn about the problems at the start up, it is certainly his credit. He tries to be transparent, we must see it from the positive side. Mister director has even addressed me in an open letter which I unfortunately did not answer. But I am glad at the same time because I wanted to make an unbalanced impression from my first visit together with deputies, I really wanted to praise the turbine together with the deputies, it would not be the best probably. But it is certain that there also exist other issues which we must and we should praise on the Temelin construction. However I am not going to speak about the turbine because neither me, nor my colleagues are interested in it, this is a problem which faced many other turbines, both in the nuclear and conventional use. An year must pass and only then it may be said that if the problems

continue, it is worth thorough thinking. What I have been touched with and what I would like to ask Director Hezoučský, is anything else. We have had a chance to speak to highly educated colleagues, certainly significant experts. The uniform opinion dominates still here that additional analysis and research are still necessary to be done in certain industries, because certain problems have not been clarified yet. For example the fragility of the pressure vessel up to the famous 28,8 metre platform where a certain highly-energetic pipeline leads and we assume together that these studies could be completed approximately within one year provided they all will be carried out together. What concerns me a bit, mister director, is that you already assume the result and you already know that no measures will be necessary because you do not want to put money in it. This is my question, how you see it and whether it is not a little discrepancy in it? Thank you.

Thank you, I am asking for a direct answer to this question.

I will give you a very concise answer (**Ing. Hezoučský**), as for fragility of the pressure vessel, it is not a technical problem and you know it well. This question has been closed from the side of GRS. There is an open problem which is being discussed, namely the highly-energetic lines on platform 28,8. We have a solution which corresponds with American standards. We discuss with the German colleagues because the technical solution at Temelin does not fully correspond with the newest requirements which are standard in Germany. But a number of other European power plants does not comply with newest requirements, own national solutions are everywhere. It regards France, but as well as a number of German power plants. We want to use the time we have at our disposal to additional negotiations including the negotiations with your institute. To be able to find the technical solution, either acceptable, or adjustable according to the additional measures. But I am not aware of any additional measures and in no case it would be such extensive contributions or numbers as they have been given here. Thank you.

It is your turn now, but we would like to give answers to the remaining economic questions. We've got approximately twenty minutes to spend on this block and then we will proceed to possible severe accidents. You may speak now.

A question for the Czech experts. A number of questions, which have not been answered, has been here. Mr Blazek – protective measures, Mr Bietsch – storage of the spent fuel rods etc. I don't want it to look like the Czech party does not want to give answers. Excuse me then, who from the Czech party will speak about the spent fuel rods? You may speak now.

Hello, my name is **Dietrich Hofmann**. Do you understand me? I have been involved in the area of interim storage of spent fuel elements for many years and I would like to inform you how the interim storage looks like there. As you know, these elements must be handled in a certain special way, they must be isolated, as that lady has already said, for 24,000 years from human population, which means from the biosphere. How it is made. After they have been displaced from the reactor, they are placed in the vessel with water, which is placed beside the reactor, for a few years. They are cooled there and the ionised radiation is also gradually reduced. Afterwards it is followed by interim storage. Many various solutions exist in this area, they proved themselves world-wide and are used in the Czech Republic as well, especially the storage in very thick vessels closed with two covers. There is such a store at Dukovany and the Czech company Škoda manufactures such vessels which correspond with the particular safety standard of the European Union. I assume that such a interim store will be possible to be built at Temelin as well. It means to store the spent elements in such vessels. Such a storage is necessary in order to relocate it later to the final store. A question has been asked here whether such a final store exists, one my pre-speaker said that this question has been principally technically solved. I think I can say that several technical solutions are on offer, one of them is to store those elements deep in geological structures. This is for example

a salt-mine in Gorleben in Germany, project Yuka Mountain in America. There are various solutions, but a political decision is still missing that would state which method will be used and whether it will be complied with nation-wide or regionally. Such discussions are also carried out within the European Commission, Euratom or here in Vienna in the International Energy Commission. It is principally a technically possible to isolate the spent fuel elements from the population for the necessary time in such a way that no damage will take place. Thank you.

I would like to say thank you to Dr. Hoffmann but I've got anyway a number of questions without answers. I can understand that young lady from the eight row, who had a number of questions, unfortunately I am not able to repeat her name because she did not introduce herself. Assessment of risks was the matter. The cost for civil protection, shut-down, energy economy, human factor error, regarding Chernobyl as well. I think many questions are to be answered explicitly and immediately. The cost for shut-down, I think it could be answered by **Mr Hezoučký**. I will appreciate if any of the Czech specialists answer the question as it has been already asked by that lady: assessment of risks. I think this is an important question, I understand the worries of the Austrian party. I would like to ask the director, simply and concisely.

As for the shut-down cost, as Mr Vobořil has already said, a few hellers go aside for every kilowatt-hour. It means that there is an account for the fuel disposal and also for the power plant shut-down. According to the Czech law, it is possible to shut down the power plant according to EA, not just our legislation will comply with the European Union, but the Espoo convention will also apply. It means that this activity will be liable to the international check.

But the answers concerning the risks assessment are still missing from the Czech side. Who wants to speak? Prof. Říha.

The risk in waste waters is concerned, Mrs Wenisch will answer it.

Ladies and gentlemen (**prof. Říha**), I would like to finish my initial words here, I had not enough time before. I have mentioned the comparative analyses with the operation of the Dukovany power plant in the last fifteen years. And I have mentioned the low emissions getting to the people. Temelin was approved in 1993 of course under certain presumptions when the tritium limit in the waste water was established for the reason of risks for the population. Such limits from 1993 were confronted with new methods during the assessment of the influence on the environment, especially from the United States. I will deal with such a method now, in this diagram. This is the assessment of a risk of cancer and the coefficient, the calculation is presented here. This formula contains a few parameters, in particular the radio-nuclide activity, and the tritium content in Becquerels per litre as well. Here are the coefficients of other risks and as for water I speak mainly about this risk, this is a very conservative procedure. The model proceeds from the fact that a person will use water for seventy years from the place where the waste with the allowed concentration from Temelin flows in. This is a very conservative assumption leading to the verification of risk. Such a risk ranges in the area of 10^{-6} to 10^{-7} . Humanely said, the statistical average represents deaths of 3,500 persons from one million in a year and this risk increases the probability by one person, it means to 3,501. The risk for the nuclear power plant Temelin has been so calculated. Similar methods exist, I've got certain reservations, as well as my colleagues, concerning these new methods. Because the ecologists cannot be satisfied with the linear transition of the reaction to the linear burden.

Last five questions and we proceed then to another block concerning severe accidents. It is your turn now, **Dr. Schmitz**.

I only want to ask whether I understood it well. It means that the result of your calculation is that we are supposed to count statistically with one additional death in a year because of the operation of Temelin and discharge of tritium? Provided the inhabitants drink only water from Vltava, is it so?

Please, mister professor. Shall we understand it so that according to your calculations, one death in a year will be added because of the emission increase provided the inhabitants will be supplied with water from Vltava?

The final information of course takes into account the whole number of radio-nuclides which are to be found in waste waters, it is a complex information. Tritium and waste waters with tritium are a priori not cleared and they reach the consumer lock, stock and barrel.

I have had a larger amount of questions related to the air and none of them has been answered so far.

We have noted down the questions and if we have not expressed our opinion to them, they will be taken into account in the standpoint which has been already mentioned. **Mrs Dr. Schmitz** is the next to speak.

I want to say to the professors and experts from Slovakia and Czechoslovakia, which appears even in my family tree, I come from the Austrian monarchist family, dating back to Serbia, Bosnia, Herzegovina and so on. As a matter of course Tyrol, Neuerharting. I want to say to them in all friendliness that as men they are probably less informed about the fact that the sarcophagus (cover), you have probably in Czech or in Slovakian a similar expression for it, I am asking the colleague interpreter to work really hard, the Chernobyl power plant cover was so full of cracks that birds could have flown in and out and there were certain concerns of a new accident. And so I have seen as a political scientist, you cannot know about it, but I am at your disposal and at any time I will give you my visit card with my telephone number and everything, that only Putin succeeded with quite special clever climate for discussions, all human rights questions concerning the Chernobyl crisis, which brought for example me to Moscow and because of that the awful fall and operation, but we leave it out, that he received a help in the amount of ten million dollar to build the concrete walling again. This is an absolute nonsense! Excuse me then, the colleague before me used the word for which I say thank you to him: the atomic mafia. I do not want to use him in the connection with you at all because you said, it is probably true, that everything was built during communism, Chernobyl and so on. That gentleman who claimed that he has spent five years in Chernobyl, apparently forgot to visit the children hospital in Kiev. With children with two heads or stumps etc., not to mention the hardship and torture caused by this slowly coming death. And we had the honour, I am the Ö1 club member, thank you to all moderators and redactors who were collecting and shooting the documentation for ten years, the most amazing journals of the world, I ordered this documentation and have it at home. Of course in danger to life, which means on the spot. I hope that everything is being right simultaneously interpreted. Yes, one of my predecessors, my name is not only Schmitz, but also Mezerharting, was the university professor as well and a minister in Prague later on and we may have the chance to discuss on good terms the common transition to the alternative energy sources. This is the only strategy how to survive together in the sunny future, which, I always say the truth, I also have many opponents, is without oil as well, from the Persian Bay and so on. Kadáfi and others belong to this as well. Because you may of course get rich from the oil tap when in the west the people

are so idiotic and use petrol instead of electric-powered vehicles. This whole change is necessary for our common survival. My door is open for eastern countries and I think that we will still have other good discussions. Thank you.

Thank you, **Mrs Haller** is the next please.

I would like to say to all people present here, to our Czech friends, to our visitors from Bohemia and the scientists, the police as well as the media that this is not an open hearing. Nobody has been let in for at least two hours, not only the suspected, but nobody at all. And I think that all who are talking now should know that this is only an internal discussion. Thank you.

I can confirm it, excuse me ... Just a moment, **doctor Streeruwitz** is speaking.

Yes, we have started this hearing as the open one and certainly this is not the organiser's fault. It was necessary to use the given measures. We said to the safety authorities that they may let in further groups only if they are quite certain that no situation arises during a quarter of an hour as it was this morning. After it was said to us that this is possible only by means of a body search of each individual, and you know that a whistle may be easily hidden. Because the safety authorities cannot ensure this, we cannot allow such a situation to be repeated. In sense of the discussion which is led here and also in sense of those to whom it is related. It would not be fair to allow the similar situation for the second time. After the police had stated that they were not able to ensure it, we have taken such a decision. We are not able to recognise with the naked eye whether the individuals are suspected or not. This hearing was open and accessible for everyone up to the time when we had to implement the ordinal restrictions that would enable the hearing to continue at all. I am asking you for your understanding that we have taken this responsibility and the hearing was open up to eleven o'clock when we had to implement the given measures. Thank you.

Thank you, I am asking Mr Herdina from the European Commission to come as the next speaker.

Only briefly, then it was a misunderstanding, **Mrs Fleming** is speaking.

I really appreciate the chance of talking here with the Czech experts, whether openly or not. I am asking the gentleman who was talking here about the 24,000 years long radioactive half-time for his attention. I am always fascinated and shocked when any persons think that they are taking the responsibility on them for anything which is to take place in 20,000 or 24,000 years. I congratulate you on your self-confidence. In any case, I consider the fact itself that you want to bury anything, that may kill and demolish, for 24,000 years, cruel, inhumane, unacceptable and really inadmissible. And I am surprised that in the discussion which has already been leading on this topic for twenty or thirty years, there are still people who have not understood it. They simply cannot take over the responsibility for something in the next 20,000 or 30,000 years.

The last application from the Austrian side, **Dr. Lechner**.

I would like to remind the Czech colleagues once more of our research, in no case I asked in my presentation to deal with models here. I think that our data are available, they are recorded. I still cannot find anything seizable on your data. You say: we will it simply export, there is no risk here, the prices will increase. I suppose this is not enough for the investment decision as well as for the decision for start up. We say that if you start up the Temelin, you only increase the damage in comparison to a zero version. I think that a number of unanswered questions remain. The answer about the increase in price is unacceptable. I suppose that a number of question still remain. I also do not accept that the normal investment budget is identified as a trade secret. I think that such a reaction – it is rather an answer which is to be given rather by shareholders – I think that this is a reasonable investment, the question

is important from the economic point of view for the Czech Republic as well. I think the answers can be general, but only up to the time when anything happens.

Thank you. I would like to say once more that all questions we have not come at now or which have not been possible to be answered, are recorded on a tape and the Czech party will get a copy of all those voice records, so that it will be then possible to deal with those questions directly.

Director Hezoučký has also ensured me that these answers will be available on the home website of the Temelin power plant.

Pavel Kohout – application for a discussion.

I would only like to remark in the introduction that not all Czech people must learn democracy and not all Austrian people may teach democracy. Democracy is a very fragile flower which is necessary to defend every day against its bad sister called demagoguery. And in this tense situation we see both in full.

And now the following to the issue itself. My life has taught me to think realistically. The Austrian politicians represent quite legitimately the society which majority pronounced against atomic energy many years ago. The Czech politicians represent quite legitimately and lawfully the society, that declared in their majority for the atomic energy. And these are the facts. And we are now facing such a situation where we will really do magic if we do not want to see unpleasant consequences. If it goes further as it goes as now, up to now, then after the first lap where the children go to the border, which both parties have already shown, the majority of Austrian children will have the feeling that the Czech people are criminals who want to kill everything life and the Czech children will on the contrary know soon that all Austrian people are extortionists who do not want to allow them what the others already have. This is not the right way to go, really. I have tried to speak to my friends down there this morning, because I really feel like between two chairs. A Czech and Austrian, an inhabitant of Prague and Vienna. I came to this country when I could not speak Austrian, German yet. I have learned it. And this is the development which may have serious consequences even in the old democracies, and so dear friends, it is necessary that anything crosses our mind. In my opinion the problem is not only to discuss hundreds of questions, one question is important and directive for me: "Can Temelin be safe or not? Are we, will we be endangered by Temelin, or not?" We live in the world which is less and less transparent because we will be able to acquaint with the many modern problems worse and worse. And therefore also ...

(it was not quite clear now what acoustic signal it was, was it a signal from outside or inside? Was it a signal for technicians here in the set of buildings, it was no action intended to interrupt Mr Kohout's statement)

We will continue according to the list of speakers now. It is your turn.

Ladies and gentlemen, I have thought how to finish after an agreement with doctor Kienzl the first block covering the environmental issues and related questions and proceed to the second question in which the Austrian party is quite legitimately interested. And I think that better than, and I am not sure whether the inhabitant of Prague Pavel Kohout or the inhabitant of Vienna Pavel Kohout, but in any case I would like to say thank you very much to him for his words.

And we have also agreed with doctor Kienzl to continue without any break considering the time pressure, and a representative of the State Office for Nuclear Safety, Ing. Prouza, will speak about the problems of nuclear accidents now, and he has got maximum 15 minutes for his presentation. And so I am asking doctor Kienzl to start.

Thank you and a representative of the Czech party is speaking now.

...as to explain the further procedure - we deal with severe accidents now, a declaration in the length of 15 minutes presented by a Czech expert will be now and then by an Austrian expert is to follow and then we will have the open discussion again. Thank you. I am asking you for your contribution.

Good midday, dear presidium, ladies and gentlemen. In 15 minutes it is very difficult to take into account the problems of accidents which may occur on any nuclear plant. As you certainly know, although these problems are not directly related to the EIA study, the Czech party has organised a workshop for specialists in the given area where we tried to answer all questions. I premise that I will only try to briefly summarise in this presentation what has been presented on that workshop and I will not react on the material presented by the Austrian party yet – I mean those 160 mentioned pages. I received it on Friday and I only managed to dip it during a weekend. This is an issue for extensive discussions which we may address in the future, I am sure we will touch it in the discussion to this topic. Because the expressions "beyond design accident", "severe accidents", "accidents in general" have already appeared several times during this morning, I would like to present a scheme worked out by International Commission for Atomic Energy at the beginning for us to agree what the subject of this presentation indeed is. (Maybe the technicians call each other) ...

...so may I continue?! Before I go back to this topic, I will explain the position of the State Authority for Nuclear Safety. We had to deal with safety analysis of this power plant in detail during the process of licensing of Temelin. We've got a number of licensing proceedings, administrative proceedings, which are directed to us by our atomic law, where we have to deal with the assessment problems.

Before I proceed to accidents, I am going to say a few remarks concerning the discussed issues of the discharges into the air and waters in case of normal operation. A number of questions have been asked here, what models and why we use a dose instead of the activity. I would like to explain to my Austrian colleagues that the power plant Dukovany had the limits concerning the air and waters defined in the activity values from the time of its start up and we proceeded in the last years from the expression of limits in the activity values of radio-nuclides to assess the doses in accordance with the European directive which orders the member countries to implement a certain system in order to assess the radiation coming from large sources to inhabitants. That procedure is fully transparent and is in accordance with other procedures used in developed countries to assess the collective dose for a crucial group of inhabitants in the surroundings of the nuclear plant. We are ready to discuss such data in detail with your experts. To calm you, although we express the values in doses of final yearly limits, we monitor very thoroughly the daily, monthly discharges into the air and water in the radio-nuclide composition. In addition, spectrometric measurements are carried out in a chimney as well as in waters, where the composition of the individual radio-nuclides is known. This is my remark to those discharges at normal condition.

Now about the classification of those extraordinary events. As you may see, the table starts with the probability of the origin of the given event and finishes with criteria for its assessment. I haven't got enough time to explain the table in details, but if you take notice of

the individual rows, the foreseen operational events up to the so called severe accidents are concerned. The accident planning is completed on this level in all developed countries, i.e. on the probability of an event, which is higher than 10^{-6} . The Czech Republic is conservative in this area and in our legislation – it is not only the atomic law and related decrees, but especially in the government order from 1997, it is required that assessment of all types of radiation accidents with the probability higher than 10^{-7} in a year is carried out during assessment of a power plant, equipment of a similar type, i.e. we assume the probability lower by one order than the majority of developed countries. Of course, the course of the given accident is assessed during that assessment, its possible impacts and resulting radiological and other possible consequences.

Our legislation contains the intervention levels proceeding from international recommendations such as the recommendation of the International Commission for Atomic Energy and directly from the European directive No. 29 of 1996 which has been already quoted. This is only for the illustration. Again, I haven't got enough time to speak about it in more details. These are intervention levels up to so called deterministic impacts of radiation. If there is a danger that those values are exceeded, a measure is always taken.

In addition, it has been spoken many times in a different context about the so called immediate action. Only those are concerned which are given here. It means a shelter for inhabitants, the iodine prophylactics – i.e. the thyroid gland blocking and time constrained evacuation. We use the internationally recommended values as well, they are at intervals and they mean that no measure is taken under this intervention level, it is always taken above the upper value and optimisation of execution of the given measure is carried out inside the interval. And this is fully in accordance with the EU requirements again because the optimisation principle is one of the basic principles of the radiation protection.

We have proceeded from both the deterministic and probability principle by the definition of possible consequences of the individual accidents that we have analysed and we have taken into account all the demographic conditions of the given locality and meteorological condition - a long-term compass-card – to answer the question that has been asked here, and the consequence of it is for example the fact that we have included the town of Týn nad Vltavou into the emergency planning zone where the direction of wind outweighs in the long-term point of view. We have carried out a number of calculations, we have presented them to the experts again – I am not going to describe them here, I will only show you, because views have appeared in some cases that we are only aware of doses at short distances for a short period, this is not true, we have calculated doses for a year, both including ingestion and without ingestion, and even the whole-life doses, I could demonstrate a few pictures to you.

Because the calculation codes issue has also appeared here in a different context, I would like to show one picture from which it results that the codes we have used have been compared, or their calculations have been compared, with calculations of others, in the world used codes, including the Cosyma programmes, on which the majority of calculations made by the Austrian party insist in the already mentioned study of the Federal Agency for Environment.

Now to the conclusion of this presentation. Many sequences have been calculated and presented in this comprehensive, approximately 30-page material worked out by the Czech party where the individual sequences are described and we have proceeded from two basic criteria. That those sequences have been assessed with the highest probability up to 10^{-7} and those sequences which may cause the most serious radiological consequences. At the same time, our criteria are highly conservative, you know that contrary to a number of western power plants, we've got the so called protection area around the power plant – a restrictive zone where no residents live, by which we increase safety for its closest surroundings.

I would like to say in the conclusion – it does not mean that I want to prevent the first question – that we haven't assessed the events with the probability lower than 10^{-7} . We have

assessed. It means that we know the consequences of events with the probability lower than 10^{-7} , but such events are planned nowhere in the developed world. Such events are solved ad hoc. At the workshop we offered the Austrian colleagues, and it was even realised, that data of the monitoring networks in the individual countries have been exchanged, we will also finish tuning of the monitoring systems, in case, if by chance – and I am not one of those who allege that no event with the probability lower than 10^{-7} may occur, and if the event occurs, then we must know how to solve it. And this is the problem of all developed parties. Thank you for your attention.

Thank you, doctor Prouza. And now I would like to ask the expert representing the Austrian party for her statement. It is **profesor Helga Kolb-Krompf**.

Thank you. Ladies and gentlemen, I will briefly introduce the results of our analyses of the presented documents related to severe accidents and results of our own research. As far as especially the severe accidents are concerned, I will speak about the accident sequence issues, and the inventory of the power plant. The information, which we received within the study on endurableness for the environment, but only on request, they contain information about the inventory of the German reactor 1300 MW. It means a reactor with a higher power. It could appear that over-estimation takes place, but this reactor is equipped with a lower number of spent fuel elements. Because we received the inventory for calculations only on request, we proceed from the fact that the data are involved which are used by our Czech colleagues to make their calculations. There are no data related to the choice of the emergency sequence in this inventory, only two of them have been made public. I will speak only about the sequences, it is more problematic from both of them there. The "containment by-pass situation" persists here, it means that the radioactivity does not stay in the containment, but it passes it by and is discharged into the air by other ways, by a failure of all systems at the same time. The probability of the mentioned accident is given in $7 \cdot 10^{-10}$. If you see a similar sequence, the value at release is higher than $6 \cdot 10^{-5}$, this is therefore an accident at the range of the emergency state according to the law. According to us, this is not the worse case. A lot of investigation has not been carried out so far within discussions about safety of the power plant. Apart from other thing also concerning the containment failure in case of more severe accidents, the hydrogen detonation, throughput of the containment overground board, late failure of the containment as a result of a high pressure. These may not be excluded on the basis of the presented documents. The released parts which appear by such an accident are much higher than for the V-sequence.

(Table)

You may see here the individual nuclides in the blue colour and reference data from the German studies related to the containment failure. The further explanation is related to the V-sequence. The source element was apparently lower than anticipated, the weather situation could not be too unfavourable and the characteristics of a model may not be fully estimated yet. The last membrane, EPZ, will go up to Austria, we would like to know the procedure of such calculations and the real limit for EPZ in Austria. However, some of the Czech calculations were not clear, we have done them separately, we have used the PC-Cosyma programme for various weathering situations. We have found out what was going to happen on the Austrian border. At three usual weather conditions we always got to the dose Cs 137 after two days. It corresponds with the warning level number 6 in Austria. Briefly: for the V-sequence calculations based on a high potential exposure, a more long-term warning level 4

may also take place. The immediate action means the search for shelters, iodine prophylactics (not only for children) and supply with foodstuffs. To simplify it, a drawing of the calculated deposits for specific cases is here. It is apparent that the necessary measures are given in this area. Apart from these computer calculations, I would like to present a model which is more suitable loading of a bigger area. This is available on the Internet. It is the example of an October day in 1995 when the load was in this case very high on the territory of the Czech Republic.

...chart.....

The next case occurs when the wind blows in the direction of Austria and I could continue so. I will rather show you a dimension at which not only the Czech Republic would be contaminated, but also its neighbours up to the British Islands. I am getting to the conclusion. The EIA documentation does not comply with the requirements of the EU directives or with the common praxis in Europe or the USA in the issues of possible accidents. A comprehensive demonstration of the accident analysis is missing, together with appropriate source elements, a discussion about possible measures to reduce the probability of occurrence and impacts of possible accidents, the discrepancy of consequences for neighbouring states, a display of planned catastrophic measures in case of any serious accident. None the less it is possible to come to the conclusion for calculations on the basis of the presented documents. I have presented some of them here. In case of any serious accident, the probability of contamination of Austria is higher than the probability of contamination of other neighbouring states. It is connected with the weather impacts and its geographical position. The range of contamination would require a long-term measure to minimise radiation. Many cases require an immediate action, the necessary iodine prophylactics, a search for a shelter. The impacts of the accidents in principle do not differ from severe accidents at other power plants near the border. But the maximum release is higher, because of the larger inventory of the 1000 MW plant, which is more than at the neighbouring power plants with a similar accident sequence. The plant will be in operation for longer time than others, which increases the probability of a serious accident. Many analysis, which are usually worked out prior to putting the plant into operation, have not been in case of Temelin either carried out or completed yet. However their results may be decisive for the safety assessment. The today's principal questions, such as the question of the 28,8m platform or containments, cannot be answered at the moment. I think that these explanations prove the necessity to further discuss those topics which have not been completed yet. I will be pleased when the present day contributes to their clarification.

My name is **Ing. Sýkora**, and I have been working in the area of safety of reactors and operational systems and work as a leader of the project of documentation for the personnel of the nuclear power plant for all four mentioned categories. I would like to respond especially to professor Krompf. Deficiency of representative analysis in the course of severe accidents, especially the containment failure, is one of the disturbances. Mr Prouza presented the issue of the risk probability on the basis of the PSA result. The most significant events have been chosen with respect to the consequences of radiation, namely from two categories. One of them is related to the mentioned scenario of the leak through the steam-generator leading through the containment. This was principally analysed, including the calculation of the source element and radiation impact. The professor spoke about it. In addition the sequences have been chosen, which are necessary to be mentioned, with the higher probability of the radiation impacts. We have chosen those with the probability of 10^{-7} here. On the one hand, the material defect analysis in the primary circuit was concerned, then the analysis of events caused by unmanageability of transients and a consequential loss of the alternating current. As a matter of course, all phenomena described in the issues of loading of a containment have

been examined there as well. The results were presented in March, as well as the consequences of the direct consequences of the direct containment warming have been subject to an analyses. The sequences resulting in hydrogen explosions in the contingent have been examined as well, as well as further chances of a steam explosion and the consequential spring up of the reactor steam vessel against the containment wall. Of course also the issues of the contact of the core and examined methods. Beside the containment by-pass, other sequences leading to a sudden failure of the containment and therefore to a large release of radioactivity within a few hours after the failure of the pressure vessel were nor realised as a part of analysis of the transition forms of the time axis. The analysis show that if we talk about the throughput of the containment, the overground board will not be damaged during 24 hours provided no ... will be carried out [...] of course the personnel is ready for it and are able to carry it out as well. The nearest containment failure may occur only after five days. We proceed from the fact that in this respect, Temelin, especially for the containment characteristics, will not lag behind other western reactors. On the contrary, we suppose that the containment at Temelin is in some aspects better than the containments of western reactors. The next question would be directed to the probability about 10^{-5} for containment by-passes. Here I would like to explain that this question ... excuse me, this event is firmly connected with failure of personnel and substantially consists in the fact that the person on the checking point takes no action to change the event. This event is connected with the fact when the personnel fail to do all procedures for which they were trained. I would like to add to human factors that the "human factor" question has been taken provisionally into account in the project. It means that the personnel have not principally a chance to switch off the automatic operations. They have been projected in such a way that in case of any personnel failure the situation would be improved and intervention of the personnel corrected. We proceed from the fact that the personnel do not fail in case of a containment by-pass and will be able to bring the reactor into the safe condition before any severe accidents could happen. Such are the results of the personnel training on the simulator. Especially those cases belong here to the most trained. To manage the sequence by the containment by-pass is a condition for the issue of a licence for an operator. So much to the comments and questions of professor Helga Kolb-Krompf.

We've got the chance to call once more for some of the questions of the audience or for the open questions, and then a presentation of the Czech experts will follow. I've got 1, 2, 3, 4, 5 presentations.

I have asked on the basis of the accident at Chernobyl what damage incurred in Austria and I got the answer at the Chancellor's office that it was 500 million shilling, which was necessary to have been paid intranationally. I wonder, after Bohemia has been also afflicted by the impacts of the Chernobyl emergency, whether there is also known the estimation of the incurred damage?

Could you give us your name for the report?

Dr. Hans Grafinger, Ullmannstr. 6, in the 15th district.

Your name would be enough.

Can anyone from the Czech party respond immediately? If not, we will leave it open for written answers.

Hover. I would have many questions, of course. The first is that various weaknesses of the containment have been at least identified within the safety issues. The question which raised there and was there discussed as well, was what influence of the hydrogen detonations would be, and our standpoint after this Workshop in Prague, 4.dubna, on the subject of severe accidents, is that on the basis of today's analysis, as they have been performed for Temelin, it may not be excluded that a hydrogen detonations could take place, which could the containment integrity untimely question because the codes that you have used for the hydrogen analyses lag behind by approximately 10 years. It would be for the first item. As for the second item, it is all right that some conservative assumptions regarding rupture of the pipeline of the steam generator have been carried out. We have tried to estimate within the range of standpoint how to provide a less conservative assumption and more realistic measures and how to judge the realistic assumptions. For example a better training etc. and other various measures. The problem is that ruptures of the pipelines at the steam generators most contribute to severe accidents. And I would like to remark in short: this categorisation of the interpretation of breakdowns, exceeding breakdowns and severe accidents, as it was shown by Mr Prouza, is good and nice, but it should be so that severe accidents are relatively improbable. But if we look at the information from the probability safety analyses, we get to order 10^{-4} for the chance of a serious accident, for the possibility of a middle accident, as they are analysed in the EIA documentation, we come to orders 10^{-4} - 10^{-5} and for rupture of the main cooling pipeline as you have stated, we get to 10^{-6} for any leakage of the liquid radioactive waste which you have also analysed. These categories do not apply for Temelin, as you state yourselves. This is actually one of the problems why these severe accidents are in the centre of our interest. Thank you.

Can the Czech experts respond to these questions immediately?

I will try to answer at least two questions. The first question that hydrogen explosion cannot be excluded in the containment. I would like to explain here that the hydrogen detonation issue is not an issue of modelling, but it is an accident management issue. The hydrogen explosion is well examined today, and so it is clear that no hydrogen detonation may happen unless the following presumptions have been fulfilled. The hydrogen concentration in the containment must be higher than 8-10%, the oxygen concentration must exceed 15% and on the contrary, the humidity concentration in the containment atmosphere must be lower than 30%. Exactly this combination of values enables to prevent the explosion within the accident management by creating an inert atmosphere in the containment, which makes the explosion impossible. Such an atmosphere is created independently because there is a steam room in the containment. It means that if we do not reduce the steam moisture in the containment under 30%, no detonation in the containment can take place. This is necessary to distinguish.

We have analysed this case but it is connected with the fact again that the operator takes wrong actions and this would then lead to a hydrogen detonation. Of course, it is not possible to exclude such a human error for any activity and you will certainly agree with me that anyone of us may be knocked down by a car as a consequence of a human error immediately after you have left this building. The pressure is proportioned at 0,5 MPa in the containment at Temelin and for this analyses the pressure will be 1,3 MPa and therefore a crack was simulated in the containment within the analyses and then the consequences of radiation have been calculated. Nevertheless it does not mean that such a scenario must take place when a serious accident happens. It is the ability of the nuclear power plant again to manage such a situation. And we would like to invite our Austrian colleagues to see the preparation of our personnel to show them how the whole programme for the personnel looks like. We train all possible accidents which may take place.

The second question about probability, here I would like to notice the Austrian colleagues of the fact that two expressions have been confused. On the one hand, it is initiation of a failure which could lead to a serious failure. The probability about 10^{-4} is mentioned here. However, this is not a probability of a serious accident, as even the PSA results show, namely the results of the probability study. We get to 10^{-5} and 10^{-6} gradually as a result of failure to take all measures and the complete personnel failure. Such a complete personnel failure was probably the reason for the emergency at Chernobyl, but as it was said before, I think that the emergency at Chernobyl shows the completely zero safety and there was also the influence of the communistic regime. I would like to appeal to our Austrian colleagues again, if you are interested in getting acquainted with our safety culture, we are open to this discussion and I think we do not need to feel ashamed within this issue in comparison to the west.

Thank you as well for ...

... whether any other open questions of an ad hoc speaker are here.... It's your turn to speak and then immediately yours.

Seidelberger. Risk Research Institute. It means that you want to manage the hydrogen explosion exclusively by the steam humidity? Or the increase in the number of hydrogen recombiners is also planned. How does it look like with analysis, or with more detailed calculations in the division into more zones than now?

Can you answer it? Please.

I repeat what has been already presented here. Mr Seidelberger apparently does not understand the regulation and accident management principle. A detonation takes place when the air humidity goes below 30%. It means that if this does not happen, no hydrogen explosion may take place in the area of containment. In addition it results from the analysis that all oxygen in the containment recombines thank to the existing recombiner within 24 hours. It means that no conditions which could lead to a hydrogen explosion are in the containment after 24 hours.

Does it apply for every serious accident you have mentioned or

Sorry?

Yes, exactly. And with what model it was calculated and how high the zone division was. It was the point on which we focused at that time. You spoke about the 5-zone model and we said that in order to be able to simulate what is going on in the containment, we need more zones to be able to calculate the internal convexities and local relations and location of these recombiners as well ... Where is the right place. Thank you.

The answer consists in the fact that we may carry out further and further analysis which will specify our knowledge and I proceed from the fact that other analysis will be carried out. However these analysis will not change anything on the physical phenomena which are quite clear and I have explained them. It means that even these zones will not influence the conditions by detonations. And also the speed of melting of the floor covering where it is not the .. itself [...] will not change anything. If the human knowledge, other analysis will be carried out, but they cannot change anything in the measures we have undertaken to prevent more severe accidents.

Question ... I've got an even longer list of speakers.

But we will then pass each other in the dialogue all the time.

We are talking in a matter of fact around us and not together. Either you do not want to understand me, or it is really such a complex topic that it is impossible to understand it. It is then the zone division, it is not a throughput, in the upper part of the room it was explained to us last time that you have had a five-zone model there and there are some recombiners now and how you can prove with the 5-zone model now that the recombiners are in the right place. Physics does not change, of course, but the internal convexity and then those various mixed conditions and similar. Maybe you could talk about it and you could take me seriously.

Mr Seidelberger, I would not like you to think that I am not taking you seriously, we have discussed technical issues here and we have explained during these discussions that the approach to the hydrogen detonation is not a question of the containment organisation, but a question of the physical regularity. I don't want that my presentation looks like our arguments, which are essentially a consensus about the course of severe accidents ... We have never said that those recombiners which are installed at Temelin are to control neither the production of hydrogen in case of any serious violation, nor their activity as a whole. We count with them in the measures for alleviation of the consequences of accidents as well. Such measures may be created even for containments which are not equipped with recombiners and starters. We may use some characteristics of these recombiners, but we do not depend on them to manage the case from which a serious accident could arise.

I've got another list of speakers and you've got approximately half an hour time. Therefore I would like to get to other topical areas and I am taking down that there are still here unanswered questions and that the Austrian experts have been asked to continue in the discussion. Thank you. Mr Kohlberg, professor Kohlberg in the fourth row. It's your turn to speak.

My name is **Kohlberg** and I am a geophysicist at the Technical University Vienna. I have investigated the seismic risk for Temelin. I would like to mention certain facts first. According to the investigation made by the Czech experts, there exists a seismic risk up to the extent that the maximum intensity ranges from 5 to 6 degrees in the location of Temelin. However it is prescribed according to the IAEA directive for the nuclear power plants that the approximate minimum intensity 7 must be taken into account and it was done according to the data of the Czech experts as well. Therefore we could be very satisfied with you, the risk is only 6 and defined 7. Unfortunately we have not received corresponding data at our disposal. The data we have received are only partial. We came to the conclusion on the basis of these partial data that the risk for Temelin is not 6, but 7. For this reason we do not trust accordingly the unreceived data as well as the other analysis. I will explain the situation to you and show you the seismicity picture in the surroundings of the nuclear power plant [...]. Here is the power plant Temelin and the circles show known earthquake epicentres. Big circles represent a stronger earthquake and smaller circles represent a weaker earthquake. You may see here that the most serious risk for Temelin does not come from the close proximity of Temelin, but from the possible earthquake on the Austrian territory. The question is only, in what extent the earthquake on the Austrian territory will be shown in the area of Temelin. There exist various methods of calculations and views, related to this standpoint, differ. We hold a very conservative view. In our opinion, the standpoint of the Czech experts is not a

conservative standpoint. I would like to show you a Swiss study in which various points of view have been taken into account. If you notice only this first row, a local magnitude is given here, the average value for calculations by various experts and you see that for the "optimistic case" the value stated by experts is 0,2 and the "pessimistic case" of other experts is 0,45. We came to the conclusion that the Czech experts always take account of the "optimistic case" and not of the pessimistic version and therefore we have not the necessary confidence even in the following examinations for which we have not received data so far. I will show you, from the data we've received, as a case, they might have been reviewed in the meantime, because we haven't received the latest data, this curve, this is a reduction. Such curves demonstrate reduction of intensity with the distance from the epicentre. Every point means one particular place, a certain reduced intensity, now ... We would have the strongest certainty when we lay the used curve on all data points for the calculation. However this would not be sufficient because for statistical reasons we would need to define the probability function which would lie above the highest points. You can see from the table now that the curve closes all points some times, it goes even through those points some times.

Thank you.

Yes, this is the conclusion of my presentation. I only wanted to bring nearer that we do not have a serious respect to those Czech examinations for the above mentioned reasons. Thank you.

Doctor Schenk will answer these questions directly. Please.

Thanks for the presentation of some results, which my colleagues have prepared. Just to repeat, I would like to say, that I am going to talk now especially about earthquake in Laibach, which has been mentioned here too. It is this earthquake [...], and you can see the distance from the power plant. I will show you a map here, where professor Preusch mentions especially macro seismic observations. This is the only one from all of data, which corresponds with the intensity of 6. In the Austrian bases concerning the epicenter, the intensities are of about 9-10 .. intensities mentioned, it is necessary to point out, I would like to thank to doctor Haman, you can see, where it has been published. It is an analysis of after-effects. The strongest after-effects are centered, if we will see it. These areas, where the after-effects can be extremely dangerous, belong to Danube. Ground is very bad here as it barely sticks together. So, if ground sticks together bad or there are alluvia, it could increase the concentration of almost two grades. This example concerns also Soběslav. Soběslav is situated on the alluvia of the Lužnice river. It is only one example and the intensity is also 6. We can see it also at these curves and from the point of view of calculations, as we indicate the biggest epicenter, and thus the intensity is then 9 or 10. In the distance of 130 km number 6, it will be then 3-4 grades. We have always tried in case of these curves ... you have certainly seen... we have been always on the side of safety. The earthquake, which occurred in 1590 cannot be studied, from the statistical point of view from annals and notes, we can see its highest value. Regarding local earthquakes, I have prepared another overhead. You can see the intensity of the local earthquakes..these are measurements over the last 10 years and I would like to point out now, that the originally assumed effect of the Jachym break does not appear here and clearly, who is interested in seismology or monitoring ... the seismic data are measured in the distance of 50 km. Earthquakes were also measured in this locality. There would be certainly also influences to Austria but it has not been measured. We were wondering at the last table, where the value of 0.2 was mentioned, as it would have been an exposure. All of us know from the seismologic practice, that we would reach the intensity of 7, in a certain place, when for instance the local intensity reaches the grade of seven, there would have to exist magnitude of 2-3 grades. I don't know from which Swiss study has been this fact deducted, I know the sources, which doctor Dieter Mayer is talking about. We used to work over some projects together with him, discussed on exposure in Europe and cooperated with doctor Grüntal. I have a map here, which we published for Austria. It might not be just a public hearing, but it might be interesting for the Austrian side to see the map of exposure. You can see that even earthquakes measured in the Alps are not dangerous. This means that also requirements for nuclear safety are met.

Thank you. I still have 6 persons on my list and thus I would like to 7, excuse me. And thus I would like to close the list of speakers for today.

Good day, my name is **Lahodinsky**, I am from the Institute for risk research. I would just like to make a short add, that this is not the local micro-earthquake over the last ten years, but this is a correct estimation of maximal possible earthquake, which cannot be shown based upon only 10-year measuring and monitoring. In order to consider repetition of such strong earthquakes, which we know from history or maximal possible earthquake, there are other methods existing, which have not been used yet. Such measurements were recommended by IAEA and also by an organization in Vienna, nevertheless the investigations have not been carried out. And we are afraid that no relevant measurements of this type have been taken. Thank you.

Thank you for the clarification. **Mrs. Rinich** is the next to speak.

Measurements, which took tens of years and which were mentioned here, were carried out based upon recommendations by nuclear committee and in case of a locality with lower seismic phenomena, three-year measurement should be sufficient. These are not designed for the maximal provisions. Well-known catalogues and data are used for maximal earthquake. We have true data from the past 50 years to our disposal for our territory. These data are the same for Austria and for central European countries. We don't have any catalogue dealing with 2500 years, but all geophysical and surveying aspects have been considered in this case. If you don't have such data, you can approach professor Krompf, whom I myself sent many data through Mr. Dieter Mayer-Koser and he has enough information though. If you need some more data, please, contact me and I will provide you with them. I don't think you are right in this issue.

Thank you for offering other information. Petra Seibert. Institute for meteorology and physics, Vienna.

After-effects of severe accidents, and especially after-effects in Austria and Czech republic, and especially the methodology, which was used for calculation of these after-effects. First, it is necessary to say, that the submitted grounds do not allow us to check the calculations made in Czech republic, because there were no sources posted. Because there is a darkness in the used models.

...HERALD and RTARC are mentioned in our written grounds and also HAVAR was seen in overheads today. Thus it is not clear, what models was going on, how they were calculated and mainly, what was the intent of their using. As you probably know, we made our own calculations, which led to absolutely clear conclusion, that there are no provisions necessary to be done in Austria, even though short-term measurements, but you refuse it. However, you have not explained, why do you consider our results to be wrong. I would like to ask you to tell us what is wrong, in your opinion, in our calculations with PC-Cosyma, because these results are leading to the result, about which you said, that was wrong. I would like to return to one overhead, which has been presented, and from which was deducted a dose of contamination by cesium, and I would like to ask, if this dose is related to the dose of ground radiation of cesium sediment or if it is only an estimation of a dose, which was related to the whole of the catastrophic scenario with all loadings and all nuclides, as it is the way, which we should track. Furthermore, I would like to start talking about the role of rainfall and I would like to ask the Czech scientists, whether they have considered rainfalls in their calculations or not. If not, then I wonder why and if yes, then I would like to ask them what quantity has been considered, and if they have also considered such cases with no rainfall

during a certain period, but when the cloud moves first without any rain, and then when the radioactive cloud reaches Austria, it starts raining. I would also like to know the results of such calculations. As one Czech colleague has already said, rainfalls can bring an extensive loading and if even the Czech party sees so, why haven't we got the results regarding this issue in our grounds, and why the final conclusions contain such statements that there will not be necessary to take any immediate measurements in Austria such as iodine prevention etc. Even though it is obvious, that such case can occur. Thank you.

Thank you. It is possible, that a Czech expert can ad hoc explain, what models, what assumptions, and what is wrong with Austrian calculations? Please.

Ladies and gentlemen (**Ing. Prouza**). We were probably present at a different discussion. I didn't say your thoughts were wrong. I said that the results, which you had presented from the point of view of cesium deposition, were relevant to seven days. It means that they will reach the value of 100 milliSieverts in 7 days. As well as before at the public hearing, I...excuse me, I let you finish your thought before too, so please, be so kind and let me finish as well. Thank you. I would like to spent much time with you and answer all your questions. I repeat again, I've never put question marks against your results but I said just that what you had presented, there are no measurements, no urgent measurements for it, which would be necessary to be taken. Regarding codes, I have of course mentioned the RTARC code in the reports in order to be sure that the calculations can compete with other comparisons; we mentioned also other codes, which we have here in our bureaus and which are used by the power plant. It is a common practice that not only one code is used but that there are more codes with various limit values. Regarding the rainfalls. At the workshop, which I was talking about, we said that the interval for the values, which correspond with the activities in sequences, about which has already my colleague talked. And as you can see, rainfalls up to 75 mm were mentioned. Now, this discussion is very detailed and it seems like that workshop would have been repeated. We are just repeating what was said in Prague in April 4th. Thank you.

.. he could provide all information, not all of experts, who are currently here in this auditoria, were at the workshop in Prague. And that's why not all of them can reproduce these results. But professor Kolb-Krompf attended the workshop, and she endorsed it ad hoc.

Thank you, this is the problem. You have not talked about the issues, which had not been mentioned at the workshop either. And this is the question, which we would like to get answered.

And also Mr.Prouza offered that he would be pleased to confront more intensive discussion. I can come out of it. Thank you.

Mrs. Marschalek is the next one. Here please, through the central corridor.

Again, more intensive discussions concerning controversial experts' opinions and non-submitted documents are positively stressed. Being a potential affected, I would like to ask you whether before everything happens and before the experts' opinions sometime – and now I am talking provocatively by purpose – "when hell freezes over" – will approach, who can guarantee us that Temelin will not be started up until that time? That was my first question. Technicians, experts and scientists, all of them are very competent, nevertheless they even haven't assumed – for instance that the concrete foundation slab, as it has been stated recently

– would cave in. So, how could you think, that we will believe all your conclusions, which are, as a matter of fact, opposite to the conclusions by Austrian experts. It seems to me that there are so many different methods in Czechia. And cave-in of the fundamental concrete slab is such banal issue for you that I cannot understand, how we can hold this hearing. They think, that we can never avoid a human mistake. Also insurance companies make their own conclusions of it. I will repeat myself again, insurance companies refuse any health risk originated from nuclear accidents and I think they know what they do. They would have to compensate the loss and it would be an astronomic sum. Therefore I bring up a question, if it wouldn't be better, no matter how is a scenario for accidents, to expose all costs again, which hasn't been considered yet. Then there can be made a conclusion that Temelín is simply financially unbearable and absurd stuff. As it would have been said back in the Zwentsdorf times – I know that you have spent a lot of money in it but imagine that you buy a kilo of mushrooms and I will tell you that they would be expensive for hundred thousand schillings. But you will eat them, even though someone tells you that there might be one poisonous among them. It seems to me, that this discussion includes so many opposite opinions and all of them are so vague....I don't know when they will lead to a consensus, but insurance industry shows us the way. The risk is simply financially unbearable for them. Thank you.

Ad hoc answer ... please

I (**Ing. Hezoučký**) am not any mushrooms expert, but I would like to talk a little bit about the fundamental slab. The fundamental slab, which is the subject of the discussion right now, shows, how is possible to abuse information. When the turbine in Temelín was dismantled and was intended to be fixed again, we were talking at that opportunity with our suppliers, how to do it the best way to consider the logic elasticity during the new assembling. I mean elasticity of the fundamental slab, which is embedded under turbine. Every construction has its own type of elasticity. Also the fundamental slab, which is very thick –it is 3 meter high and is made of reinforced concrete –, lies on springs and there are hundreds of tons of machinery laid on the slab. Of course, it is normal that this concrete slab will bend. We made relevant measuring and such deflection was found out to be within the expected ranges. But such deflection is to be considered during assembling of turbogenerator. This is absolute true and if some people say, either due their ignorance or by purpose, that the fundamentals of Temelín are moving or even cracking, then excuse me but I can say only one word...that's not correct. Thank you.

Sir in the tenth row

I have.. I am a friend of the recycling method of atomic power production and I can only congratulate to the Czech republic, that it accepts such a risk. But the main problem...and you have mentioned Dukovany...was it also that problematic power plant like Temelín right now, or were we – as neighbors – put more less aside? There is also another problem...what about a small accident or big accident or even huge nuclear accident...what will happen if there is north-west wind and these nuclear clouds will come then through Waldviertel to Vienna, and how far would these clouds fly if they would really release? And another thing...you can start-up the power plant without any problem in my opinion, but what will happen if any accident occurs? Do you have enough money for: first – compensate and take care about Czechs, Moravians and then – if we need it – about Austrians and Bavarians?

Thank you. Now **the sir in front of you** and then director.

It is impossible to insure an event of maximum loss but we, as neighbors, should sincerely and unreservedly discuss questions about future, which involves the next generation and probably several next generations. Because the nuclear energy opponents had to acknowledge

the fact that European parliament together with Austria postponed the date of stop using the nuclear energy of another 30 years. No nuclear power plant can be in operation for 30 years and therefore new power plants will be built, even though with participation of German Green Party. It is the politics, who shatters and scares. We have heard such arguments as: populations increase in the central Europe – Chamber of Commerce, president Leitel and also German experts talk about 1,2 child for a family. This means that our current population cannot be kept without immigration. It is not any good and strong argument, more people – more power plants and also this way of thinking and dealing. It is common for an economy but I wish Europe would take “Kjóto” seriously and that it would take seriously also future of people, to find intelligent solutions, which are offered, and will not rely only on such monocorsal method. Since the age of Neanderthals with sticks, we still have not succeeded to remove our problem, which is - newer technical solutions we have, worse difficulties arise. We together should cope with these problems in this Europe. There are scientific scenarios, which clearly say that it is possible to create more jobs through alternative and more intelligent solutions than building more and more power plants. It is really impossible, you have now 100 years – so that I would say at least one example – 100 years. It’s been over 100 years since car development begun. In the first ten years it was impossible to assume that in these days, we would have a ”metal avalanche” in this world...that cities would be full of these metal boxes and that every year, and I am talking now just about Europe, over 250,000 people would die from cancer due to exhausts of carcinogen substances from gasoline. That was 100 years of technical development, and this is example from only one industrial branch – automotive. And I don’t want this crazy thing would be repeated in case of nuclear industry, gene technology and other stuff. I would wish a wise politics in Europe, which will consider people and their future.

Director Hezoučký.

I cannot answer all questions but as I used to work as a chief engineer during putting all of four Dukovany units into service, I would like to say that during start-up of the first Dukovany unit, there was 16 shutdowns happened. As we got experience from these events, there was about half shutdowns at the second unit start-up, and if I am not mistaken, in case of the last unit, the number was 2 or 3 events. Temelín is the first nuclear power plant in the world, which will be started-up live. Within the frame of making open politics, we effort to inform public about all matters concerned. And I can honestly say that there has no accident happened in Temelíně yet. Of course, there were failures of some machinery, which is absolutely normal at every beginning. And number of these failures is being reduced over times. Everyone, who works in industry, knows the Weibel curve. At the beginning, the number of individual failures is larger and then drops to minimum. Afterwards, at the end it starts raise again. We are at the beginning now and - I don’t want to make any affirmation - but I can wholly and responsibly guarantee that the number of failures does not deviate from worldwide criteria. Thank you.

Thank you

... Any other questions, please?

Ladies and gentlemen, I would like to ask you for short replies. Ad hoc Mr **Ing. Prouza** please.

The answer to the question what will happen in case of contrary wind and rain...I would like to say that I don't think that we haven't answered all your questions. I think we have answered them but we don't understand each other yet. Here, in this table, you can see various scenarios, which have been shown in the mentioned German study. In the case of very bad conditions, as you can see here – up to the height of 1000 km, where air is mixed and these are distances from 300 km to 100 km, where it is reached the value of 10 milliSievert in seven days and for the here mentioned nuclides. I would like to repeat, please let me finish talking. I would like to repeat that if these activities...release, this situation would happen. It is not question of what we were talking about, i.e. failures, which have exceeded time and possibilities of this commentary. We can return to this point and please, do respect at least the calculations, which have been made for nuclear power plants in the world.

... I would like Czech side to continue, I would like to ask professor Pahr ... please.

Good morning ladies and gentlemen, I would also like to add a few words to the story of Temelín even if I am an extreme outsider among you. I am a mechanical engineer and I studied in Vienna. About forty-five years ago I left for BBC Switzerland and I started putting steam turbines into operation. At the beginning they were only small, then they were bigger and it was extreme development for that time. In relatively short time we increased their power up to 1 400 MW. Still ...

... Sorry, the Czech translation is without any sound ... please translation into Czech language
... I am sorry, Sir.

... It is not working ... or we cannot hear it in Czech ...

... Do you have the sound now? ...

... though ...

... O.K. It is working now.

... and then a few months ago I found strange reports of Temelín mainly in Austrian journals and newspapers. At first, I could not believe them, but then I found out that their authors were confused. Among others, they wrote about failure reactor so that I thought that a failure reactor is a reactor, which has some defects and is not functional. However, as I was informed by Temelín people later, there were no problems. They were only fabrications of Viennese journalists ... or this information was incorrectly submitted to them ... I do not know it. I was so interested in this matter that I called my friend of Prague and I told him: "Listen to me, I would like (telephone number of) Temelín director ... then it was Kutzu ... I did not know it at that time ... they may need me, I has been putting machines into operation for long time. Then that friend of mine told me they certainly did not need me because they had very good specialists, that is right, ... and I found out later that they really had very good people. And then suddenly I was called by a lady from the operator's management. She called me and told me: "Mr. Pahr, come here, we could need you though". ... "Why", I asked. ... "You should give an interview". "What the interview should be about?" "About Temelín and about nuclear power plants". So I answered to her: "Listen to me, it is a nonsense, I do not know Temelín and I should speak about the facility, which I have even never seen." And she said: "Yes, we would be glad if you do so." And then I made the mistake that I promised it and I came. They took me to Temelín. I went there on my own risk, not as it was said in Austrian press. Kronen Zeitung wrote that I was bought by nuclear lobby. It is not right at all. My personal curiousness and my interest in big turbines led me to Temelín. Then I was invited for a lunch into the canteen, then I went back and the other day I gave interview in a car club. There were a few journalists of Czech newspapers and they gave me some questions suitable for an engineer, which were not very understandable, but they only asked the questions. I was able

to answer these questions in some way and a few days later I read a horror report about myself in Viennese Kronen Zeitung, which newspaper did not participate in the interview in Prague at all. So I thought I could bring an action against him, but I decided not to prosecute Neue Kronen Zeitung because they can just go to hell ... if they increase number of their copies in such a way, it is not my business. I did not do anything. And then ...

... Please, professor, could you go to the end of your address, your oratorical time is over ...

... Excuse me!?

... Your oratorical time is over. ...

... So that I must finish now. ...

... If you could go to the end of your address.

... I am finishing now ... at the end ... I was at Temelín once more. It was very interesting. I spoke with the director many times. He explained to me the problems, which they had, and now we had to interrupt these problems. It is going to be thrilling now, it is like series novel, ... we will continue next time. You are not here for the last time, I suppose, ... or in Prague. Thank you for your attention. Thank you.

I would like to thank Professor Pahr and now I would like to ask for brief standpoint of Ing. Žďárek who is among others engaged in steam pipelines and steam generator, I ask you for your brief ... I ask you for your brief standpoint.

My name is **Žďárek** and I work with the Nuclear Research Institute. Let me say a few words regarding the question of 28.8 m turbine. Maybe it will be good to show you [...] how it looks like. Here are the conduits leading from the containment, they are marked with elliptic circuits, it is where the limiters for deviation limitation are connected. As for that I would like to say that the last PSA study says that contribution of this part of conduit, which you saw, is 0% for frequency. Yes, it is a technical problem. This problem was caused as a consequence of deviation limiters installation and it is solved intensively. We come out from the fact that the other analyses will confirm this solution as well. Another component, which was identified as a potential co-operator, is the steam-generator. Here I would like to mention the following two pieces of information. Big contribution is in case of damage to the steam collector cover, I would like to say they all are technical methods and solutions which are being performed or were already performed in order to eliminate this factor. We have qualified check [...] we [...] all pneumatic [...] we will replace all screws. Another contribution to [...] the steam-generator is ... break of steam-generator pipeline. We have a very extensive programme, which has unambiguously proved since 1992 that [...] it is valid for the generator pipeline WWER as well as for WWER-440. And I think this can also be used for other reactors and it shows that it concept is working well. That is all from me. Thank you.

... And now **Mr. Janouch** and **Ms. Drábová, SONS Director**, will speak.

Dear ladies and gentlemen, in fact the discussion is over and I would like to mention a few comments to it. I have been listening very carefully and I admit that I am scared of lack of information and its misrepresentation. I would like to go back to the question of Černobyl. Černobyl became a bugbear here. I explained why the disaster in Černobyl had occurred, but

we have other topics here, tens of thousands of liquidators have died, we have exerted our efforts and we found out that about 12,000 out of those 400,000 people should have died at their fifteen and these numbers are demographic. One lady mentioned the children with two heads. I would like to correct this information. I have seen a calf with two heads, which was born just after Černobyl disaster. And then I have seen another one, which is located in the Art Hall of Peter the Great, and it was born in 1790. These are the things which disable pragmatic discussion. We have such a nice Czech proverb: "The full does not believe the hungry." We have never heard from our Austrian friend what the Czech Republic shall do. Our coal reserves will be empty within thirty years. And where will we take the energy from, then? We are not as lucky as Austria, where 70%, or Norway, where 80% of electricity consumption can be covered by water power plant production. What shall we do? I suppose that the nuclear power plant, which we just built and which is going to be put into operation, is a reserve for us and it can provide energetic independence of our country. I was alarmed with no possibility to communicate with your youth and I suppose that we must do something in this matter. We should together thing up how to co-operate. We should meet more often and to organise lectures more often as well. I have told you several times that I will be glad to visit your schools and to talk with your youth about this issue. If such unilateral disinformation is made through our mass media, it will lead to the situation, about which my friend, Pavel Kohout, was talking with such a pain. It is that the friendly relationship, which was between our nations, will be worse and worse and we will not understand each other soon. And that is I do not want to at all. We can say Vienna is our city as well. Thank you.

Dear ladies and gentlemen, I do not want to extend this hearing by coming with my own standpoint. I suppose that the discussion, which has being proceeded, is very good and I believe that this public hearing fulfilled its target. I have heard one sentence here and I believe I must react to it. It was the following sentence ... if I can quote it word for word. "How can we, Austrian, believe you, Czech, that your measures, numbers and estimations are correct?" In my opinion, it is the whole base of the problem and that is what I feel bad about. That is the big problem about Temelín between Austria and the Czech Republic. Everybody in the Czech Republic may ask the same question to each expert who spoke here today: How can we, Czech, believe you, Austrian, that your interests in answering the questions are really serious? But it is not the correct way. In my opinion, the correct way was started with the Prime Ministers Agreement. In my opinion, this agreement can be great success. And that is what might step by step destroy this disbelief causing the problem basis. I believe that the today's discussion contributed to that. Thank you.

Thank you. And now we are reaching the absolute end of the today's discussion. **Court Councillor Rauter** of Nether Austria please.

My name is Rauter and I work with the Nether-Austrian Government. Nether Austria in its statement to the discussion method stated that it did not consider the documentation satisfactory, but that it would participate in the today's discussion to co-operate during dialogue, but we do not consider the environmental impact assessment closed. Nether Austria is afraid of an accident, which we hope will never happen. How could such an accident affect the Earth and its population? During today's questions and answers I was not persuaded that most questions could be excluded. There still remains the question what such an accident would mean for Nether Austria, how we are prepared for it and what the measures are. There is also an unanswered question what the compensation would be in case of damages. Nether Austria makes press for these questions to be clarified and it will contribute itself to further monitoring of this problem. We consider it necessary to submit a new form of the

documentation after these questions are clarified. At the end, my concrete question concerning the today's hearing would be as follows: How shall the results, standpoints, their consideration and answering of questions be performed? Thank you.

Dr. Herdina of the European Commission.

Thank you very much. My name is Andreas Herdina of the European Commission, General Headquarters for Extension, I did not originally want to intervene into this discussion at all. But after the words of Mr. Pavel Kohout I thought I should specify something. Pavel Kohout spoke about the fact that this was a dialogue between two countries, whose companies find different answers to the question: What residual risks can be taken into consideration for energy supply? Both governments are legitimated to represent these companies. If we look at this problem from the European perspective, it is not atypical. We have eight member states, which use nuclear power for supply, out of fifteen, and then we have seven candidate states, which do the same, out of twelve. I feel bad that two democracies in Central Europe, which are neighbours and are connected forever, while one of them entered the European Union only five or six years ago and the other is just before acceptance, lead such a representation war for these two different concepts of European companies. That is why I was very excited and pleased that today at this hearing, we and those, who participated, talked to the concrete facility and that there was a dialogue about Temelin issue here. Totally, if you count that, there are 150 reactors within the European Union and there are 25 reactors within the candidate states, 7 out of them should be shut down. Nobody should dare to build the discussion about the nuclear power plant on the level of Austrian - Czech relations. Unfortunately, it partially happened and we are, or I am, frightened with that. When I return to Pavel Kohout, responsible way between democracy and demagoguery has to be sought and found just here. I personally would be very glad if no demagogical words, such as "scrap reactor" or "infringement", are used during discussions between Austria and the Czech Republic for international nuclear events within the category qualified as zero. I would be glad if this discussion is not bothered with demagogical words, but to state the facts even if we do not understand each other well. I do not think that we should make policy here, which is not motivated by will to generally increase nuclear discussion in Europe. And here all participants should approach to that with certain self-criticism. It is unambiguous that improvements have to be done on the Czech side, but we cannot ignore that some improvements can also be done even on the Austrian side. We require the candidate countries for example to introduce independent supervisory nuclear authorities. Austria has no such authority, and for instance Latvia has approved the act in this sense. We have deaths where nuclear things are used independently on the power plants. In my opinion, it does not mind that every country, regardless the existing or future European Union member, has to do its best to be a good example for the others. In this sense I mean the European Commission and its Commissioner support the Melk Agreement and that we allow the dialogue, which cannot be realised if one side says something and the other one only covers its ears. The dialogue was apparent today and it is my personal wish to understand the today's hearing as it was meant, i.e. as hearing of arguments. After all difficulties we had when we were not able to converse in a dialogue, we should end with the fact that we were hearing each other and that we were enriched by information of the others. I suppose that it would be bad to end this meeting and to think that we came with the only valid truth on one or on the other side and did not accept the other side because we did not find positive reaction. Unfortunately, it is natural for nuclear debate that it is difficult, but the dispute between democracies and neighbours who depend on each other can only be solved by means of a dialogue. It was the motivation for us why to lead the dialogue on safety questions, which are not closed since the process in Melk. And

that during the process in Melk the Czech Republic voluntarily on request of Austria accepted the method of environmental impact study. We support this process by means of secondary meetings and monitoring. I personally would be glad to see the time when the Czech Republic and Austria would agree without mediated help and I wish this time came as soon as possible. Thank you.

This hearing does not mean the end of further discussions, but its part with participation of the public is over. Therefore, all questions, which were asked here, together with all comments, which were given to the Czech commission, will be examined in the final documents of the Czech commission. Then these documents will be available for the discussions with Austria. As it was already said many times during the today's hearing, we will provide the public with these documents via Internet. Now, I would like to ask **the spokesman of the Czech Government** for the last words.

Thank you, I will speak only briefly because we do not have enough time. This public hearing, which was among others broadcast both by the Austrian and the Czech television as well as by the Austrian and the Czech radio, was prolonged a bit. As it was already said before, the Czech Government decided voluntarily and over the scope of the international obligations that the Temelín Nuclear Power Plant, which had already been completed, would go through the test of environmental impacts. It also decided to realise two public hearings within this process and the process in Melk as well. The first hearing took place two months ago in České Budějovice and the second one took place here in Vienna. I think that both of these hearings met their purpose. Those, who wanted to participate in the discussion, and those, who wanted to ask difficult and mostly critical questions, used this possibility. They came here and they asked their more or less professional and detailed questions. I must regret that there were also those, who boycotted the hearing both in České Budějovice and here in Vienna. It was said that democracy and the relations between Austrian and Czech people should be based on the mutual dialogue and understanding and the base for that is that both parties have to be able to speak to each other. Those, who tried to boycott this meeting, were unfortunately excluded from this process. The main part of this hearing should have been formed by the question of environmental impacts. As you saw this hearing was extended with other questions and aspects, which directly relate to this commission. And as you also saw, the Czech side did not have any objections against it and in the future it will also always answer your questions and will consult them with your experts. As I already said before, two hearings were planned and two hearings took place. The question of our Nether-Austrian colleague was: "What will take place next?". The results of these hearings will be summarised together with the received statements and then they will be submitted to the Czech Government as a whole report for its further standpoint. The conclusions will be used as a basis for decision-making of the Czech authorities for instance in the matter of permissions approved according to the Czech laws. As it was said before, energetic policy is a matter of every state. As my colleague of the European Commission said, about one half of the European Union member countries decided to use the nuclear power plants and the other half decided to use other energetic sources. The Czech Republic belongs to the first group and Austria apparently belongs to the other group. My do not want to change your opinion and your standpoint, but we expect that you will accept the decision of the Czech Government and of the Czech authorities according to the obligatory international standards and agreements. For instance that Temelín will be safe not only according to the Czech, but also according to the international standards. At the end I would like to mention something else than Temelín. During the last time the Czech-Austrian and the Austrian-Czech relations were reduced only to the question of Temelín. The Czech and the Austrians, as we know and as I said before,

have to live in this region as neighbours. And I suppose that it would be in interests of both nations to live here as good neighbours, that we discuss on many things and we will accept each other. And we are also in contact in the matters, about which [...]

The experience of the hearing in Linz, which was held last year, caused that I was afraid that there will be a discussion here, during which we will not understand each other and will not find any real contact. I would like to thank all of you that it is not so. I mainly thank the Austrian Government. The second thank belongs to all ladies, who have been interpreting our statements since nine o'clock a.m. and the third thank, the greatest from my point of view of the moderator, who has organised a lot of hearings like this, belongs to the men on my right hand side, I would like to thank to the organisers that they allowed such fluent course except of a half-hour extempore, but it was solved anyway. Thank you very much gentlemen.

... thank you, as regards the half-hour intermezzo and the perfect organisation, I can only say that it was not part of our organisational preparations. As regards the question of necessary mutual coexistence, as it was said several times, I can say with satisfaction that not all lifelong relations has to be a condemnation. As regards belief, which was mentioned by Ms. Drábová, I would like to say that we must distinguish different levels. The population, which does not meet large projects every day, face them with disbelief. Never mind if they are dams, highways or nuclear power plants. And we, as responsible people in each of these countries, have to regularly try to gain belief of our own population, to represent its interests well and to feel the responsibility in our country. It is part of belief, which we need, that we meet each other like this, that we think seriously and we allow mutual understanding. It is the more difficult, the more complex the projects are. There are not so many facilities, which would be as complicated as the nuclear power plants in their structure. Therefore, it is important for us to reach such mutual understanding and accordance. Then we have to come to the conclusions about what is possible, what is necessary and where we can find solution. In this sense, I would like to thank you, and mainly our Czech guests for their willingness as well as to the others, who participated in this discussion, from which the questions were formed. On their basis we created the issues, which are the base for our further mutual process in the sense of the agreement of our Prime Ministers. Thank you very much.

At the end I would like to add one message of Mr. Hezoučský, Director of the Temelín Nuclear Power Plant. Even if you do not like nuclear power and Temelín and even if you are against it, you all are cordially welcome to see this nuclear power plant and our colleagues will, of course, show and explain everything to you.

Thank you for this offer, I hereby ... thanks God ... finish the today's hearing ... *(then there is only the record of conversation among the interpreters and their leaving, then the record ends)*.

7. Settlement of questions that were not answered on the public hearing in Vienna on 26th June 2001, related to the activity of Commission and document "Assessment of impacts of the Nuclear Power Plant Temelin on the environment"

Question (Mr Lechner): No future monitoring is contained in the assessment

Answer: Future monitoring is solved in Standpoint (Chapter II), page 7 – Particular measures.

Question (a representative of Lower Austria, Mr Rauter): I am missing the data in the EIA study where it would be mentioned whether the territory of Lower Austria is to be affected in case of accident and in what concentrations.

Answer: Emergency planning may be found in Chapter 2.7.3. of Assessment (pages 192-206). The more detailed information on serious accidents and emergency planning is included in the document "Principles and methods for specification of the emergency planning zones for the Nuclear Power Plant Temelin", including assessment of consequences in case of beyond design accidents and serious accidents. This information was presented to the Austrian experts on the workshop held in Prague on 4th April 2001 and is also available on website <http://www.mzv.cz/EIA>

Further see Appendix, part 8

Question: I am missing assessment of the solution alternatives, whether they are better (from the point of view of the environment as well as from a certain economical point of view)

Answer: Solution alternatives is a term which is used in the EIA assessment on the stage of a project or design. It is really disputable to assess alternatives of solution when the construction of Temelin is finished. Completion of the power plant proceeds from the decision of the government of the Czech Republic and is a part of the Energy Policy of the Czech Republic. The mentioned solutions do not take account of the alternative to stop or preserve the power plant

Question: Additional investment is going to take place in connection with Temelin – how will be this investment dealt with, will the Czech Republic ask the European Commission for any support in this case?

Answer: It is not obvious what additional investment Mr Rauter had on his mind. If it is the investment related for example to the turbine repair etc., the particular financial means are included in the investment design of ČEZ a.s.. The Czech Republic does not calculate on any support from the side of European Commission or other states.

Question (Mrs Schmitz): Impacts of Chernobyl; nuclear waste final disposal issue.

Answer: Impacts of the accident at Chernobyl are given in publications of the State Office for Nuclear Safety, International Atomic Energy Agency, International Radiation Protection Commission, Scientific UN Committee for Impacts of Atomic Radiation and the World Health Organisation.

Further see Appendix, part 8

Question (Mrs Wenisch): Complete yearly emissions in waste waters are not specified; the procedure is not clear, which lead to the conclusion that the limit 40 μ Sv per person, will not be exceeded; calculations and data for them are missing; unclear way of measurement of liquid and gaseous emissions

Answer: Yearly emissions are given on page 193 of Documents presented by the investor and further see Appendix, part 8

Question (Petra Saibert): Concerning the issue of transfer of radioactivity into the air – no emissions limit is defined in the CR, but only a dose limit – however there is not a calculation procedure for calculation of such waste value doses. A complete list of emissions for calculations is missing. To explain the models used for calculations. Collective dose calculations are missing, which part of it falls on one inhabitant of the Czech Republic and other countries. Large amounts of tritium escape in waste waters, exceeding many times the natural values.

Answer: Everything is described in detail in Appendices part 8 and part 5 (parts Accidents Prevention and Design Accidents). As for cooling of tritium water from the primary circuit, it proceeds in the closed cycle, therefore its leak into the air is prevented.

Question (Mrs Marschalek): Fear is not assessed as a factor influencing human health. Assessment of the guarantor risk is missing from both the Czech and Austrian side, or cost for international atomic guarantee. A human error cannot be excluded.

Answer: The Nuclear Power Plant Temelin is properly insured on the basis of the Act No. 18/1997 Coll. The Czech Republic has been a signatory of the international Vienna convention on damages in case of nuclear accidents since 1995.

Question (a gentleman): Is the estimation of the incurred damage after the Chernobyl accident known in Bohemia?

Answer: No compensation claim for damages has been set up in the Czech Republic.

Question (Petra Saibert): The use of codes HERALD, HAVAR and RTARC is unclear; were rainfalls also included in the calculations?

Answer: It concerns the codes of various organisations of the Czech Republic: HERALD (ŠKODA), HAVAR (Energoprojekt) and Slovakian Republic: RTARC (Nuclear Energetics Research Institute). All of them proceed from the Gaus model of spreading and all of them have been standardised by the State Office for Nuclear Safety to be used in the safety documentation.

Question (Mr Scholeck): A human factor error cannot be ever excluded. Insurance companies refuse any health risk from nuclear accidents – they would have to stand the loss and it is the unquantifiable amount.

Answer: The Nuclear Power Plant Temelin is insured on the basis of the Act No. 18/1997 Coll. The Czech Republic has been a signatory of the international Vienna convention on damages in case of nuclear accidents since 1995.

Question (a gentleman from the 10th row): What if an accident takes place, how it will be with delivery, when we will have the north-west weather situation and these atomic clouds come then over "Waldviertel" in the direction of Vienna and how far ... those clouds would go, if they really were to be released. And besides – in case of any accident, have you got sufficient means to take care first for Czechs, Moravians and then, if we need it as well, for Austrians and Bavarians?

Answer: see Appendix part 5 (Prevention of Accidents and Design Accidents)

We remind that Temelin is multiply protected from the point of view of nuclear safety. In case of any, even minor, defect of the reactor, the reactor will be shut down automatically. Temelin is equipped with a containment made of reinforced concrete to retain any leakage of radioactive substances in case of accident. Atomic dust to hit the territory of the Czech Republic or Austria including Vienna and other neighbouring states is therefore improbable.

8. Answers to the enclosure to the letter from Minister W. Molterer of 11th July 2001, falling within the sphere of action of Commission

General/procedural

1. The lawful decision of the State Office for Nuclear Safety is a guarantee as well as the political declaration made by the Prime Minister of the Czech Republic, M. Zeman.
2. A set of 21 specific measures is given in the Commission Standpoint. As far as nuclear safety is concerned, the decision of the State Office for Nuclear Safety, proceeding from the Act No. 18/1997 Coll., is decisive.
3. See Chapter 2.7.3. of Assessment; the workshop material. The power plant is indemnified from damage according to the Act No. 18/1997, the Czech Republic has been a member of the Vienna Convention on damages from 1995.
4. No refund has been claimed from the side of the CR.

Economical aspects

18 items – not in the sphere of action of Commission. Answers by ČEZ, a.s.

Normal operation

1. There is not any discrepancy between the low liquid discharges and planned monitoring of impacts on the environment. Monitoring is a necessary presumption of control.
2. Project effluents of the Nuclear Power Plant Temelin are given in the sent Basis of investor on pages 192 and 193. Value of 40 μ Sv has been specified by the State Office for Nuclear Safety and is related to the lower effluents. Further information is given in Chapter 5 of this standpoint – part Air and Climate. The implemented methodology is described in safety reports, it proceeds from meteorological characteristics of the locality and recommended relations concentration/dose, food consumer basket etc.
3. Calculations for Temelin are given separately. Comparative analysis are the recommended way of assessment.
4. See the answer to questions from the hearing in Vienna (Chapter 7) and to the Austrian standpoint (see Chapter 5).
5. See point 2
6. Model NORMAL was used for calculations. We recommend a bilateral meeting of experts of both countries to specifically explain the topic.

7. Both models (NORMAL – Energoprojekt, RDETE – Nuclear Energetics Research Institute) proceed from the standard Gaus model and both of them are standardised to be used in the safety documentation of the Czech Republic. They are comparable with the COSYMA programme and use complete climatologic, geographical, demographic, alimentary and other entry data. (The Commission recommends bilateral meeting of experts of both countries as in point 6.)
8. The answer proceeds from a certain statistical probability which does not have to be realistic in a particular case.
9. The question is not clear and we recommend to discuss it on the bilateral meeting of specialist of both countries as well.

Severe accidents

17 items – does not belong to the Commission sphere of action. Answers are to be arranged by the State Office for Nuclear Safety.

Seismicity

2 items – orally answered by dr. Schenk on the hearing in Vienna. In addition, a written answer was prepared for the Summary standpoint of the Austrian party (see Chapter 5 – part Earthquake Risk).

Final disposal

1. Decision on final disposal place will be taken on the basis of the conception on disposal of the spent fuel, which is to be approved by the government of the Czech Republic. It is possible to count with its operation from 2065. A detailed geological survey is being prepared now. In the meantime the spent nuclear fuel will be stored in the interim store houses in the locality of the Nuclear Power Plant Dukovany, which is a safe solution without any negative impact on the environment. Nuclear fuel for the Czech nuclear power plants is produced in Russia (Dukovany) and in the USA (Temelin). It may be said with a certain probability that new technologies will be implemented by 2065 for reprocessing of the highly active materials with a short radioactive half-time.
2. According to the Act No. 18/1997, the state is responsible for disposal of the radioactive waste, that established for this purpose a specialised organisation Radioactive Waste Disposal Administration. (See also Chapter 5 – part Prevention of Accidents and Design Accidents)