

NUCLEAR RISK AND PUBLIC CONTROL - nuclear safety and waste management REPORT 2003

A joint project of Central European NGOs

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NUCLEAR RISK AND PUBLIC CONTROL - nuclear safety and waste management

A joint project of Central European NGOs

Part I

Joint Report



Austrian Institute for Applied Ecology

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Vienna 2003

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Introduction

The Czech FOE-Group Hnutí Duha, the Hungarian Energy Club and Za Matku Zem (For Mother Earth) from Slovakia and the Austrian Institute for Applied Ecology (AIAE) cooperate since June 2003 in a four country project. The project is funded mainly by the Austrian Ministry of Agriculture, Forestry, Environment and Water Management, and also by the Vienna Ombuds Office for Environmental Protection and the Regional Government of Upper Austria.

In this report we analyze the concepts for spent fuel and HLW management chosen in three countries which in a few months will be members of the European Union: the Czech Republic, Hungary and Slovakia. Our NGO-partners in the three candidate countries have compiled the legal situation concerning licensing and regulation of nuclear facilities in their countries and the waste management plans. Their focus in particular was to find out the opportunities civil organizations and the public have to take part in nuclear decision making.

The AIAE's part was coordinating the work on the report and it has written the compilation of EU legislation relevant to public information and public involvement in nuclear and environmental issues.

The Workshop we held at November 3 and 4., in Vienna was another part of this project. A documentation of the lectures, comments and discussion at the workshop will be published, too.

The Joint Report consists of two parts: Part I contains summaries of the national NGO reports and the general information on EU legislation and policy, as well as recommendations for public participation processes concerning nuclear waste management. Part II contains the three national reports made by the NGOs.

We compare the procedures chosen for developing waste management plans with regulations all EU member will have to implement into national law during the next years. These regulations contain the rules of the Aarhus Convention and give the public extended rights to get information relevant to environmental issues and define the state programs where public participation processes must be implemented in the policy making.

Nuclear energy policy & nuclear waste management are without doubt dedicated to be subject of participation processes. The newest of these directives, the SEA-directive (Strategic Environmental Impact Assessment) has to be implemented in June 2005. [CD 2003/35/EC Directive providing for public participation in respect of the drawing up of certain plans and programs relating to the environment]

Therefore we think it's time to change the licensing processes and the making of state programs for nuclear energy and related issues in order to give all interested associations and NGOs the possibility to take part in these processes.

Participation is not just another word for a public relation campaign. A participation process is a new democratic procedure. The implementation of a new political culture is not only a question of legislation but at first a learning process for all parties: for the state authorities as well as for the NGOs. The success of a participation process depends on the following conditions:

- First condition is to take seriously the contribution of the public and the civil associations.
- Second condition is an open process of decision making where the decision must be the result of the dialogue between experts, operators, authorities, NGOs and the public.
- All interests must have equal chances in the process, for example: the operator has to pay for all expert's statements – included the experts nominated by the NGOs.

The result of a successful participation process is a new solution and a perspective for the future

Summary

On the next pages we summarize the situation in the European Union and discuss where three - soon to be - EU-member states are standing on their way to participation concerning their plans for the management of spent fuel.

We presented this report deliberately at the day when the meeting of the Joint convention on the safety of spent fuel and radioactive waste management begins here in Vienna, because in this international agreement we miss any hint on public involvement in the decision making related to radioactive waste management. It is not enough to make peer reviews of policy making in the view of the interest of nuclear lobbies to solve their problem of nuclear waste. We think that the Joint Convention has to be amended in order to consider a high standard of public participation and not only a high standard of safety (defined by nuclear experts alone)!

Austria is a good example why it is useful for all stakeholders to involve the public and the NGOs in an early stage of decision making. In 2003 Austria celebrated the 25th Anniversary of its referendum against the use of nuclear power. The referendum took place only after the first NPP was nearly finished. In the following years – with the TMI accident in the USA three month after the referendum and the biggest accident of the nuclear history in 1986 at the Chernobyl NPP all discussions about a revision of the referendum stopped. Several other countries in Europe followed the Austrian phasing out of nuclear energy.

In 1980 Sweden's population voted for a shutdown of the NPPs in the next 25 years. Italy renounced nuclear energy following a referendum in 1987. Germany has announced its decision to shut down its last reactors in 2021 and in Belgium agreement has been reached to do the same in 2025. 8 out of 15 EU member states use nuclear power: Belgium, Finland, France, Germany, Netherlands, Sweden, Spain, UK. But only three of these (France, UK and Finland) have not decided for a moratorium or for phasing out nuclear power.

Mrs. Palacio, Energy Commissioner of the EU, believes that the solution of the nuclear waste problem will increase public acceptance of nuclear energy in the EU. In order to achieve activities in all European Countries the Commission prepared a Council Directive on the management of spent fuel and radioactive waste.

"In the Commission's recent Green Paper on the future security of energy supply in the European Union (EU), the need to find acceptable solutions to the management of radioactive waste was identified as the principle concern affecting the nuclear option. Also highlighted was the need for maximum transparency in the identification of solutions and that further research was an essential ingredient in resolving the outstanding technical issues and also in raising the level of public and political confidence in the solutions. A recent EU-wide public opinion survey has confirmed the importance of the radioactive waste issue in the eyes of the public.

Irrespective of future strategies regarding energy production, the waste that exists now must be dealt with in a way that respects the basic principles of protection of human health and the environment." [COM(2003) 32 final, explanatory memorandum to the "waste directive"]

The content of the EU-directive is not very different from the IAEA's waste convention, despite one very important issue: the EU Directive sets time-limits for the development of the waste management plan:

"Member States shall integrate the following decision points into their programs:

(a) authorization for development of appropriate disposal site(s) to be granted no later than 2008. In the case of geological disposal of high-level and long-lived radioactive waste, this authorization may be conditional upon a further period of detailed underground study;

(b) in the case of short-lived low and intermediate-level radioactive waste, if this is to be disposed of separately from high-level and long-lived radioactive waste, authorization for operation of the disposal facility to be granted no later than 2013;

(c) in the case of high-level and long-lived radioactive waste, to be disposed of in a geological repository, authorization for operation of the disposal facility to be granted no later than 2018." [COM(2003) 32 final "waste directive" Art. 4]

The so-called Palacio package contains beside the proposal for the directive on nuclear waste management a proposal for a directive on the harmonization of safety standards in the EU. The fate of this directives, at the moment is unclear. The European parliament is discussing the proposals very controversial.

The proposal inter alia demands the minimization of radioactive waste. We think that is a very good argument for the phasing out of nuclear power. Countries without nuclear power create less than 10 percent of the volume of radioactive waste than countries with NPP. And it is practicable. The discussion of the European Parliament after the Italian blackout delivers some very good arguments:

'The cost of saving off-peak electricity by demand management is often half of the kWh price consumers pay to use electricity. Reducing peak consumption by saving energy can be 75% cheaper than buying it. In addition, implementing energy efficiency measures is normally a faster and easier process than increasing supply" (Information memo from Mrs. De Palacio to the Commission after US blackout 14 August 2003) ' quoted in [Turmes,C. 2003, rapporteur of the EU-Parliament]

'All experts agree, that it is the most efficient way to make production of electricity happen as close as possible to the points of consumption in order to minimize stability risks to the grid management and thus insure security of supply. Most decentralized power productions - gas driven gas and steam turbine up to 350 MW, large and small scale heat and power productions, micro cogeneration (as a pre-stage to fuel cells) and renewables (biomass, small scale water, wind, solar) will enhance not only security of the grid, but also bring Europe back on the Kyoto track. ' [Turmes,C. 2003, rapporteur of the EU-Parliament]

Status of Spent Fuel Management in the Czech Republic, Hungary and Slovakia

All three countries have not decided how they will handle spent fuel in the long term. They have built on-site storage facilities where spent fuel can be stored in transport & storage containers for the next 50 years.

All three countries follow a strategy which leaves all options open – in the Czech and Slovak report to the Joint Convention this strategy is called an “open nuclear fuel cycle”. “Open” means probably that they have not yet decided their back-end strategy, but it could also be interpreted differently: maybe they have learnt, that there exists no closed cycle for nuclear fuel, because they will need a repository for high level radioactive waste, in any case unrelated of the treatment technology chosen for spent fuel.

In the reports to the Waste Convention of the three countries four options for the spent fuel management (after 30-50 years decay in interim storage) are in discussion:

- to bring it to the final storage without further treatment,
- reprocessing: this technology generates new high level waste vitrified and packaged in steel vessels plus a bigger volume of other radioactive waste which has to be stored in repositories for LILW
- some friends of nuclear technologies believe in developing transmutation: a technique where the first stage is a chemical separation process similar to the reprocessing technology. Since we all have experienced that the reprocessing plants in Europe are among the biggest contamination sources in our region, we have not much confidence that developing this new process of SF treatment, will result in an environmentally sound technology.
- deliver the SF to Russia and hope they will not send anything back ...

According to media reports, the Russian Federation will receive foreign spent fuel for storage as well as keep reprocessing products in Russia. This invitation to dump their waste problem in Russia is valid for fuel of Russian origin and is a marketing measure to increase the sale of Russian nuclear fuel. But it could open the way for e.g. NPP Dukovany to get rid of its HLW. [Nuclear Fuel, July 21, 2003]

Concerning the final storage itself all three countries prefer to build a deep geological repository and all three are now – in different stages – of the process to find an appropriate site for it.

At the moment the context in which the question of waste management has to be decided is absolutely not defined:

- either they have no serious plans concerning the future of nuclear power in the countries or this plans had not influenced the writers of the waste management concepts,
- they have not decided on the treatment of SF.

The answers to these questions are preconditions for the siting process because they determine the kind and volume of waste which will be stored, and the containers which will be used.

Governments should avoid unnecessary expense and organize country-wide discussion- and participation-processes before they continue in the search and planning of repositories. In such processes a consensus for the strategically questions which influence the nuclear waste management must be achieved.

Regarding the question of funds: no doubt it is necessary to collect money for all the activities the use of nuclear power delegates to the future – but as long as we don't know what kind and what volume of waste will be stored it is nearly impossible to find out whether the operators of nuclear facilities have a chance to make enough money to cover all the cost.

Legislation, regulation, technical planning, authorities and their competencies, the existing waste volumes and prognoses for the existing plants (planned life-time, amount of spent fuel, decommissioning waste –

without details) all this is covered by all three national reports to the Joint Convention on the Safety of spent fuel and waste management. But public participation is not mentioned in them.

Status of SF & HLW management & public participation

Public information is obviously not an important topic in the view of the authors of the reports to the Waste Convention. – in the Safety Convention it is covered in the view of emergency situations where procedures of alarming people living in the vicinity of the plants are explained – nation wide all three countries have a radiation monitoring system and information is spread via the web-pages of authorities and the power plants.

In the context of waste management and the search for sites to build repositories the responsible agencies think in terms of public relation campaigns, information centers and excursions to the plant.

The experience of NGOs in the EIA processes in the three countries is not satisfactory. Their concerns were not taken seriously and their statements were often seen by the operator and authorities as misleading propaganda. In some cases the results of discussions were ignored by the political system.

A dialogue with interest groups and a public participation process was obviously not conceivable for the agencies (and the operators of NPPs) when they thought about their planning process for nuclear waste management.

Public participation • why and how it should be done •

The strategic question of energy policy and nuclear waste management can not be decided from the view of technical experts alone. Such questions are of great interest for environmental and social associations, political parties, industrial lobby groups ... Nuclear power is a very controversial political issue which includes political and ethical questions as well as economical and technical ones.

‘Although science and scientific advice are a key input to decision making, public confidence in its objectivity has been shaken by events such as recent human and animal health scares. There are concerns that the policy responses have been driven more by narrow sectional interests than the wider interests of society.’ [COM(2001)264 final; p.8 EU strategy for sustainable development]

Sustainable development needs the involvement of all social groups and the consideration of all their interests.

‘An open policy process also allows any necessary trade-offs between competing interests to be clearly identified, and decisions taken in a transparent way. Earlier and more systematic dialogue – in particular with representatives of consumers, whose interests are too often overlooked – may lengthen the time taken to prepare a policy proposal, but should improve the quality of regulation and accelerate its implementation.’ [COM(2001)264 final; p.8 EU strategy for sustainable development]

In several European countries and in the United States nuclear safety has been discussed in licensing processes and public hearings – public involvement and control through NGOs and their experts had in fact led to higher safety standards in the nuclear industry.

The report shows, that the public in the three examined countries (CR, SR and Hungary), is not properly involved in the process of searching for a nuclear waste disposal site.

Since in the EU the implementation of the 'Arhus'-directives has to be finished in June 2005, its time to change the licensing processes and the making of state programs for nuclear energy and related issues in order to give all interested associations and NGOs the possibility to take part in this processes.

The discussion has to include

- the energy concept and the role of nuclear power, because it is not acceptable to deposit spent fuel or nuclear waste without a clear decision, how long and how much waste will be brought into the repository,
- the question whether it is morally acceptable to leave dangerous long living waste to coming generations,
- the concept of spent fuel and nuclear waste management
- the question of reprocessing
- the question of export of nuclear waste to other states
- the procedure of searching for a nuclear waste repository
- the decision between retrievability and a closed deep geological repository.
- the criteria for the selection of potential sites
- the concept to secure informing following generations about the repositories,

Conclusions & Recommendations

The report shows, that the public in the three examined countries (CR, SR and Hungary), is not properly involved in the process of searching for a nuclear waste disposal site.

This report also summarizes where the three countries are standing in the development of their plans for the management of spent fuel.

Not one of the three countries has yet decided how spent fuel will be treated in the long term. They have built on-site storage facilities where spent fuel can be stored in transport and storage containers for the next 50 years.

In the reports to the IAEA Waste Convention of the three countries the following four options for the spent fuel management (after 30-50 years in interim storage) are under discussion:

- direct disposal: to store the spent fuel without further waste treatment
- reprocessing: this technology generates new high level waste vitrified and packaged in steel vessels plus a bigger volume of other radioactive waste which has to be stored in repositories for low-level nuclear waste
- some countries still set their hopes on transmutation, which does not exist yet: a technique where the first stage is a chemical separation process similar to the reprocessing technology, and causes new waste streams
- deliver the SF to Russia without any retransport of nuclear waste

We think, that it is not acceptable to start searching for a repository site, if you are not able to tell the concerned people and communities how much and what kind of waste you are planning to deposit in their backyard and how long the nuclear transports will go on.

We criticize, that neither the IAEA Waste Convention nor the proposed EU directive on nuclear waste even mention public participation in the decision making related to radioactive waste management plans.

Therefore we recommend:

Regarding the **IAEA Joint Convention**:

- To amend the IAEA Joint Convention on the Safety of Spent Fuel and Nuclear Waste Management, so that a high binding standard for public participation is required for member states

Regarding the **Export of spent fuel**:

- **No export of nuclear fuel to other countries** - the EU should take a clear decision against the export of nuclear waste abroad, e.g. to Russia – some of the examined countries still consider this option

Regarding the **conception of waste management**:

- **SEA** - Strategic Environmental Impact Assessment for Nuclear Waste Disposal Concepts and Programs: In 2005 the SEA directive has to be implemented as national laws in EU countries, there should not be any exceptions for nuclear or the new EU-member countries.

Regarding the **future of nuclear power**:

- to amend the **EURATOM directive** with an obligation to integrate a participation procedure in every planning process regarding spent fuel and high level waste management.
- **Nuclear phase out** – only after a decision about the nuclear phase out of a country, it is morally acceptable to bury nuclear waste in somebody's backyard. Nuclear phase out is the most effective way to minimize the amount of nuclear waste.

Regarding the **energy policy** --Make the nuclear phase out practicable by:

- saving electricity by demand management
- implementing energy efficiency measures
- promote eco-design
- push minimum standards of appliances and office equipment
- promote sustainable power production: renewables: biomass, small scale water, wind solar,

Overview over the country reports:

Czech Republic

SF management

Czech NPPs are operated using an 'open nuclear fuel cycle'. This term simply means, that no decision on the final solution for spent fuel and nuclear waste was taken.

Today, the Spent Fuel (SF) is stored in interim storage facilities at Dukovany (in operation) and Temelin (planned). The waste generators are considering reprocessing or even transmutation technology as future options. That gives them the opportunity to delay the decisions about treatment of SF. Nevertheless the basic strategy for SF is their disposal in a Deep Geological Repository (DGR).

The planned DGR is expected to accommodate all Radioactive Waste that cannot be deposited in near-surface repositories. The overall amount of SF from NPP Dukovany (4 units) and NPP Temelín (2 units) after 40 years of operation will be 3730 t heavy metal. For the discussion about the site of a repository it is essential to have information on the total amount of radioactive waste and the duration of the process of bringing waste to the dump. Since the Czech electricity utility CEZ announced that its concept includes the intention to build new NPPs, the 'candidate' communities for the repository must be informed about the forecasts for the duration of operation of the repository and the required storage volume

The Radioactive Waste Repository Authority (SÚRAO) is responsible for the development of the future deep geological repository of HLW and SF. In the Czech Republic granitic rock formations are assumed to be appropriate for this repository. Based on earlier acquired geological data 30 locations had been identified in the Czech Republic, while eight of them were selected by 1998 for more detailed investigation. In April 2003, two of the localities (Klenová, Kunějov) were ruled out (probably for political reasons) one was added and 5 others were defined as reserve localities. Today there are 6 localities considered as the 'main candidates' – Budišov, Rohozná, Lodhěřov, Vlksice, Pačejov and Lubenec-Blatno. All of them are situated on granitic bedrock. It is absolutely necessary to inform the public about the criteria which led to the election of the localities for the repository.

The process of preparation of a deep repository in the Czech Republic will take place in four stages:

- Surveying of candidate locations, evaluation of their suitability and proposed structure of engineering barriers,
- Selection of the final location and the corresponding structure of engineering barriers,
- Confirmation of safety of the deep repository with safety analyses,
- Proposal of a technical solution of the engineering equipment and civil engineering objects, infrastructure and architectural design of the facility,
- Development of the respective documents and obtaining of required approvals associated with the project (land use plan, zoning and planning decision, building permit, impacts on the environment, etc.).

The deep geological repository is planned to be put into operation in 2065.

Public participation

The experience the NGOs & the public in the Czech Republic made with participation in licensing processes for NPP were not very favorable. According to the Atomic Act 'the applicant is the only participant of the licensing process'. The concerned municipalities and other public are excluded from all licensing processes.

'Section 14: (1) In administrative proceedings, the Office shall conduct independently of the proceedings of any other administrative body. The applicant shall be the only participant in the proceedings.' [Atomic Act]

Therefore the prospects for public participation do not seem high when it comes to the plans concerning the nuclear waste. On the 25th August 2003 SÚRAO has announced the narrowed down list of 6 localities which will be further researched as possible future sites of the national DGR. Since that time the efforts in all of these localities against the plans for DGR have increased. Large proportions of local inhabitants and political representatives have signed petitions listing their arguments against DGR. The first local referendum (organized by the municipality) has taken place in Oslavicka village (situated inside the proposed locality Budisov). Out of 80% of local inhabitants who participated in the referendum, 98.46% voted against the future placement of DGR in the locality. Other municipalities have announced organization of local polls for the coming months.

In the current Atomic Act (18/1997 Coll.) or other regulations there is not any binding condition that would restrict the state (SÚRAO) from placing the repository in a certain locality if the local inhabitants do not agree with it.

Out of the 4 representatives of the public in the board of SURAO one is nominated by the two chambers of the Czech Parliament while three others represent the localities with currently operating storage facilities. The regions designated as candidates for the DGRs are not represented in SURAO's board therefore their possibilities for taking part in the decision process is very limited.

Hungary

SF management

Up till now Hungary has not decided about spent fuel management. Under the present circumstances the direct disposal seems to be more expedient. It is the Radioactive Waste Agency's (PURAM) responsibility to prepare the strategy for the back end of the nuclear fuel cycle.

The nuclear fuel for Paks NPP has been supplied by the Soviet Union and later by Russia. In the framework of the contract the Soviet Union, and later Russia took back all spent fuel for reprocessing without sending any kind of waste back to Hungary.

In 1995 the interruption of the spent fuel reshipment caused an immediate problem in Hungary. The spent fuel ponds at NPP Paks became nearly full by the end of the 1995 refueling. Paks NPP constructed a modular vault dry storage (MVDS) system at the site. This Interim Storage Facility for the Spent Fuel (ISFS) was licensed in 1995. It is in operation since the end of 1990s – and it is being enlarged, to accommodate all SF from Paks.

Hungary does not have a clearly laid out energy concept. At the moment there are no plans for the installation of new nuclear capacities, however, a life-time extension of NPP Paks is an often discussed option.

As a long-term strategy Hungary plans to construct a repository for disposing of long-lived and/or high-level radioactive waste.

One of the most detailed studied areas of the country from geological point of view is the Boda Claystone Formation, which underlies a uranium ore-bearing sandstone formation mined for 42 years. In Hungary, the investigation of potential host rock for HLW disposal started by studying this geological formation located on SW-Hungary.

The waste management agency PURAM explains the reasons of the site selection without preliminary, country wide screening as follows:

‘Knowing the geological features of Hungary, the number of formations being potentially suitable for final disposal of high-level radioactive wastes is rather limited. ...Utilizing the facilities and infrastructure of the uranium mine, the formation was explored very quickly at the depth of 1050 m from the surface. ’ [<http://www.rhk.hu/english/intro4.htm>]

In principle even if the mine is closed the possibility is given to continue the research program for a long term, and of the tendency of site selection practices world-wide - to operate it as an international reference underground laboratory. This decision requires still further investigations.

Public participation

‘For PURAM it is mandatory to keep the public informed on a permanent basis of all actions and measures taken. This responsibility involves not just disseminating information but also setting up dialogue with the population and the local, regional bodies involved in the proposed choice of a disposal site or the site for interim storage of spent fuel.’
[<http://www.rhk.hu/english/intro4.htm>]

Even if PURAM sees its obligation not only in the distribution of information, a professional PR company was contracted for the public relations campaign in the framework of research for the national repository.

‘Regarding the local public relations activities, the fundamental aim ... was to ...keep the local residents interested and confident in the development.

‘Letters inviting indications of interest were sent to all municipalities. This first letter was only introductory and informing the mayor about the Project, nothing had to be decided on. Great emphasis was put on explaining to them that the repository unit will only be built in a village where most of the residents agree to it.’

‘Those, who formally expressed interest were involved in the next phase of the Project. ...Through a consultative process, attempts were made to ensure that all interested and potentially affected people were fully informed ...

‘Having the geological feasibility taken into account, by narrowing the surveyed area, the field work began at three sites of the municipalities expressing willingness for acceptance. Resulting from these studies, the management of the National Project selected the Üveghuta site, where the geological site characterization started.’

‘The municipalities founded their own Social Association for Control and Information, under the TETT acronym. Since its establishing, this Association regularly follows with close attention the investigations and provides information to the public.’
[<http://www.rhk.hu/english/intro4.htm>]

It seems that Hungary has made some experiences with involving communities in the research for the LILW repository. Our Hungarian partner organizations regard the result of this information campaign less favorable than PURAM. According to their report TETT has no own web-page, the associations don't take a stand on technical/professional questions. The Energy Club thinks that TETT has little experience in the assessment of scientific information and is not enough prepared to distribute scientific information to a not-very well educated population.

‘During the preparatory activities for HLW disposal, the municipalities of the surveyed area also were grouped, and formed the West-Mecsek Information Association. By this way very early stage of the investigations, a direct relation was established with the inhabitants involved.’ [<http://www.rhk.hu/english/intro4.htm>]

Even if the site of the closed uranium mine is geologically suitable for a DGR, from our point of view an open participation process with the affected local communities is necessary. This process has to involve all interests group, its aim is to define conditions for the development of the site, so that the people living there can accept or refuse this solution. The above quoted international practice to install deep underground laboratories is often the first step to a final repository – without asking the people.

Slovak Republic

SF management

The current basic concept of spent fuel in the Slovak Republic can be characterized as similar to the Czech one, by 'open fuel cycle'. Short-term storage of spent fuel (3 to 7 years after it has been removed from the reactor core) is secured in the pools (SFP), which are installed at each reactor unit. Interim storage of spent fuel (40 to 50 years after its removal from the reactor) is secured by a separate storage facility at Bohunice. A spent fuel storage facility at Mochovce is currently in first stage of investment implementation. Regarding the future of the nuclear energy in Slovakia, the energy policy regards the completion of Mochovce unit 3 and 4 as an unlikely option. [<http://www.economy.gov.sk/angl/angl2.htm>] The politicians on the other hand mention this possibility regularly.

Slovakia does not consider the transport of spent fuel into foreign countries, when followed by a re-transport of reprocessed products (Pu, U, HLW). That leaves three options for the back-end strategy:

- to verify the possibility of transporting the spent fuel into foreign countries for final disposal or reprocessing without importing the products back into Slovakia.
- to verify the possibility of international or regional solution on the final spent fuel disposal.
- construction of a deep geological repository (DGR) for SF and HLW in the Slovak Republic.

There is a correspondence between SE and several organizations in the Russian Federation in order to verify the possibility of transporting the spent fuel for reprocessing into the Russian Federation without returning the resulted products back into the Slovak Republic. Proposal for such transportation was indicated by the Russian side already.

Development of a DGR for permanent disposal of SF and HLW started to be dealt with systematically step-by-step in 1996. Two stages were completed in the period of 1996 through 2001. Five candidate sites have been selected, where the basic field research was performed. Site selection is planned for the period of 2003 through 2007.

Results of works to be done in 2008 through 2012 (2015) shall demonstrate all necessary conditions of the DGR preparation and implementation. The most important aspect of the above is the DGR location, including its public acceptance. The next stages of the DGR development shall then be the following:

- preparatory stage, resulting in the construction approval,
- implementation stage, resulting in DGR operation.

Public participation

Despite serious research on Slovak web-sites we could not find an information on the procedure of siting for the SF-repository, which explains the procedure of communication with and involvement of the interested public.

´Regarding the radioactive waste treatment and storage in Slovakia the basic decision about the siting of nuclear facilities was done many years ago. Therefore the opponents of nuclear power mainly in the sites´ vicinity don't resist strongly against the Bohunice Waste Treatment Center and the National Radioactive Waste Repository Mochovce.´ [Eurelectric – Union of the Electricity Industry, December 2001]

Distribution of Information to the public is mainly in the obligation of SE (Slovenske Electrarne; the state owned electricity utility and operator of the NPP) and by the Nuclear Regulatory Authority UJD. Both organizations are obliged to provide information related to environmental and health impacts to the public.

‘ Nuclear Regulatory Authority of the Slovak Republic being the central state body of the Slovak Republic provides in the framework of its competence the information on safety of nuclear facilities independently of their operators. UJD enables the public and mass media to review data and information on nuclear facilities. The important point of being informed is to prove, that the area of nuclear energy use has its obligatory rules in the Slovak Republic and their observing is controlled by state through the independent institution - UJD. An establishment of UJD Information Center as early as in 1995, the basis of conception of informing the public on UJD activities and on nuclear facilities safety was created. The Center secures the communication with the public and mass media that helps create a positive picture on the independent regulatory authority supervising nuclear safety.’ [Annual Report of UJD 2001 [<http://www.ujd.gov.sk/engtop.htm>]]

According to the Slovak national report to the Waste Convention the operator is obliged to submit the Environmental Impact Statement (EIS) and the Environmental Impact Assessment (EIA) for each nuclear facility and compare the impact of alternatives of its siting or technical solution including impact to existing facilities located in the vicinity.

‘ Process of reviewing of above-mentioned documentation includes information of concerned public (public hearing) and allows to civil initiatives and associations involvement in the assessment.’ [Slovak report to the nuclear waste convention 2003; H.3.1.]

The Slovak Regulatory Authority UJD tries to establish itself as an independent authority by providing information for the public. Our Slovak NGO partner is not fully convinced of the independence of UJD and comments its information policy as follows: ‘ Many times we have the feeling that the NR SR exceeds his competence and in many cases UJD presents the nuclear energy as a positive solution for future energy demand, what in no any case belong into the competence of independent nuclear safety judge. NR SR should act much more as an independent and serious body for controlling the nuclear power plants and keeping the safety standards.’

HOW COOPERATIVE AND TRANSPARENT ARE THE REGULATORS AND WASTE AGENCIES?

The evaluation is based on the homepage and experience the involved NGOs and the researchers had made before and during this project.

	Czech Republic	Hungary	Slovak Republic
Nuclear Regulator	SUJB	HAEA	UJD
homepage	<p>http://www.sujb.cz</p> <p>Information: a lot, but not useful to the public, many reports and official documents are made available. The most useful are still the press releases on the first page.</p> <ul style="list-style-type: none"> - a lot of information is also available in English. - contacts: are given, but no names, or whom to call on what subject. 	<p>http://www.haea.gov.hu</p> <p>A bit outdated in terms of appearance; quite a lot of information, but rather official papers. The Nuclear Safety Regulation is available, but the general legislation in connection with nuclear questions exists just as a list. The same in English.</p> <p>The homepage was hardly available until may this year. It seems, that it is just a „not-liked“ obligation for the HAEA – as it is also valid for the whole communication policy of the NR.</p>	<p>http://www.ujd.gov.sk</p> <ul style="list-style-type: none"> - the contacts on the first page are practical - information is given only in the form of reports to the IAEA, e.g. ‘safety of nuclear installations’ and therefore not apt to inform the broader public. We like the fact, that there is chapter on ‘Emergency preparedness’, but we miss clear info on what this means to the population in practical terms. Instead there are pages of proceedings and international agreements on emergency quoted. - English available.
Information given on request Communication with the general public and NGOs	<p>SUJB has several times refused to provide information crucial for nuclear safety requested by concerned public (NGOs). It is one of the least openly informing offices in the country.</p>	<p>The HAEA fulfils its legal obligations (that can be widely interpreted...). Sometimes it is necessary to ask for further information, after the HAEA answered the first questions. In the case of the INES 3 incident of Paks, 2003, the HAEA gave a possibility for the Energy Club to see the connected official papers, but did not allow to make copies of all, (in the case of the technical details of the problematic equipment).</p>	

	Czech Republic	Hungary	Slovak Republic
Nuclear Waste Agency	Správa úložišť - radioaktivních odpadů (SURAO) / Radioactive Waste Repository Authority	PURAM Public Agency for Radioactive Waste Management	Nuclear waste/planning etc. lies in the competence of the Ministry of Economy.
homepage	www.surao.cz The information available certainly gives an idea about the general mission of SURAO, but is too much based on official documents, laws etc. too be easily understood and give a clear picture of the problem and how this agency is trying to solve it. Contacts are available.	www.rhk.hu information is well presented, there is an overview of the waste situation in Hungary. Nine FAQ. Also very good: Names and accessibility of the agency's experts is available. Although many information is available, those are mainly one-sided, and not always cover the full truth.	http://www.economy.gov.sk/angl/angl2.htm In Slovak some laws concerning energy and the nuclear fund can be found, nothing more. In English only the Energy Concept is available, with a short page on rad-waste.
Information given on request Communication with the general public and NGOs	RAWRA is communicating openly with public, its information materials have high quality and its information centre in Prague is very well equipped. Yet many of the information are biased and do not fully reflect the complex problems of waste storage	PURAM is in communication rather with local than nationwide public. In its communication policy it follows a persuading strategy, and this can be seen on its website as well. Answering for NGO-questions fulfils the legal obligations (e.g. deadlines).	
The public's rights in the process of finding storage sites (interim, final etc.)	The municipalities are actively consulted by SURAO but have almost no legal rights to influence the process (local referenda may be organized but their results are not binding for the RAWRA)	In the first step for finding a final LLW/ILW repository, more than 200 possible villages were asked. Around 10% said yes. After this no more referendum was held, the final place (Bátaapáti-Üveg huta) was determined by scientific researches. The local public is informed with papers, forums etc. The research was started even though the local public does not really want a HLW repository	

European policy and the public

Far from being perfect, the European Commission has learned that the Union has to be more than a big common market. In order to achieve the objective of sustainable development the European policy has to consider environmental, social and economic progress equally. More transparency in policy and participation of the civil society is a precondition for acceptance of the EC policy by the European citizens.

The organizations of the civil society, trade unions, environmental, political, social and religious organizations (NGOs) shall have an important role in sustainable development.

„Although science and scientific advice are a key input to decision making, public confidence in its objectivity has been shaken by events such as recent human and animal health scares. There are concerns that the policy responses have been driven more by narrow sectional interests than the wider interests of society. This perception is part of a wider malaise. Many believe that policy has become too technocratic and remote, and is too much under the influence of vested interests. To tackle this rising disaffection with the political process, policy making must become more open.

An open policy process also allows any necessary trade-offs between competing interests to be clearly identified, and decisions taken in a transparent way. **Earlier and more systematic dialogue** – in particular with representatives of consumers, whose interests are too often overlooked – may lengthen the time taken to prepare a policy proposal, but should improve the quality of regulation and accelerate its implementation. The views of those from outside the Union should also be sought.“ [COM(2001)264 final; p.8]

The Commissions strategy for a sustainable Europe is only one of several documents, which give hope for more consideration of different and sometimes conflicting interests. There exist also directives dealing with the right to get information and information of the public in specific situations, but also directives which support the participation of the interested public and organizations of the civil society in policy making.

It is not self-evident, how all that directives have or will be implemented in the national legislation, but it is in our interest as NGOs that the public and its organizations achieve as much possibilities as possible to influence policy making in our countries.

Public access to environmental information and information policy

Freedom of access to information on the environment was established in 1990 with Council Directive 90/313/EEC on the freedom of access to information on the environment. This was a step forward to change the authorities approach in information policy to more openness.

In 2003 a new directive on public access to environmental information promises not only free access to information for all interested parties, but also the dissemination of information by the responsible authorities itself.

„Increased public access to environmental information and the dissemination of such information contribute to a greater awareness of environmental matters, a free exchange of views, more effective participation by the public in environmental decision-making and, eventually, to a better environment.“ [CD 2003/4/EC preamble]

...

„It is necessary to ensure that any natural and legal person has a right of access to environmental information held by or for public authorities without his having to state an interest. [CD 2003/4/EC preamble]

....

It is also necessary that public authorities make available and disseminate environmental information to the general public to the widest extent possible, in particular by using information and communication technologies." [CD 2003/4/EC preamble]

Prior to this `freedom of environmental information` directive, the Commission has prepared another directive on public information in a special field of environmental issues: The Council Directive 89/618/Euratom 1989 on informing the general public about health protection measures to be applied and steps to be taken in the event of a radiological emergency. This one is interesting because the European countries have implemented it only half-heartedly.

In its communication to the implementation of this directive the Commission explains that information for the public should be provided to a wide extent:

„Directive 89/618/Euratom lays down two types of action:

- prior information to be given in a normal situation to the population likely to be affected (Article 5 of the Directive),
- information to be given in the event of a radiological emergency to the population actually affected (Article 6 of the Directive)."

.....

„- the provision of information to the general public forms an integral part of emergency planning."

„TRANSPARENCY CREATES CONFIDENCE

1. In normal circumstances the information provided should be primarily instructive and aimed at reassuring the general public that emergency plans exist, both at national level for hazards associated also with non-fixed installations or originating outside national borders, and at regional or local level for fixed installations.

2. It is also important to provide information on radiation protection, not just in relation to the hazards of nuclear energy but covering all radiation sources that may give rise to a radiological emergency.

...

4. ... The information for the population living near an installation should cover:

- a simple explanation of the work carried out at the installation,
- the unlikely possibility of an accident having any impact on the population,
- the types of emissions (gas, dust, liquid) which would be released from the installation in the event of an accident, and how far and how quickly they would spread." [COM(1991)103/03]

Public participation

According to [CD 97/11/EC, ANNEX I] practically all nuclear facilities are subject to environmental impact assessment:

„2 ... - nuclear power stations and other nuclear reactors including the dismantling or decommissioning of such power stations or reactors 1 (except research installations for the production and conversion of fissionable and fertile materials, whose maximum power does not exceed 1 kilowatt continuous thermal load).

3. (a) Installations for the reprocessing of irradiated nuclear fuel.

(b) Installations designed:

for the production or enrichment of nuclear fuel,

for the processing of irradiated nuclear fuel or high-level radioactive waste,
for the final disposal of irradiated nuclear fuel,
solely for the final disposal of radioactive waste,
solely for the storage (planned for more than 10 years) of irradiated nuclear fuels or radioactive
waste in a different site than the production site." [CD 97/11/EC, ANNEX I]

The information to be provided by the developer in an EIA is specified in [CD 97/11/EC, ANNEX IV]

1. Description of the project, including in particular:
 - a description of the physical characteristics of the whole project and the land-use requirements during the construction and operational phases,
 - a description of the main characteristics of the production processes, for instance, nature and quantity of the materials used,
 - an estimate, by type and quantity, of expected residues and emissions (water, air and soil pollution, noise, vibration, light, heat, radiation, etc.) resulting from the operation of the proposed project.
2. An outline of the main alternatives studied by the developer and an indication of the main reasons for this choice, taking into account the environmental effects.
3. A description of the aspects of the environment likely to be significantly affected by the proposed project, including, in particular, population, fauna, flora, soil, water, air, climatic factors, material assets, including the architectural and archaeological heritage, landscape and the inter-relationship between the above factors.
4. A description¹ of the likely significant effects of the proposed project on the environment resulting from:
 - the existence of the project,
 - the use of natural resources,
 - the emission of pollutants, the creation of nuisances and the elimination of waste,and the description by the developer of the forecasting methods used to assess the effects on the environment.
5. A description of the measures envisaged to prevent, reduce and where possible offset any significant adverse effects on the environment.
6. A non-technical summary of the information provided under the above headings.
7. An indication of any difficulties (technical deficiencies or lack of know-how) encountered by the developer in compiling the required information." [CD 97/11/EC, ANNEX IV]

Public participation has to be part of the EIA process since the EU signed the Aarhus Convention. Directive [CD 2003/35/EC] which is the implementation of the Aarhus Convention in the EC legislation has as objective to ensure *inter alia* public participation in EIA processes for certain projects and programs. The directive has to be implemented into national laws in 2005.

„Effective public participation in the taking of decisions enables the public to express, and the decision-maker to take account of, opinions and concerns which may be relevant to those decisions, thereby increasing the accountability and transparency of the decision-making process and contributing to public awareness of environmental issues and support for the decisions taken.

Participation, including participation by associations, organizations and groups, in particular non-governmental organizations promoting environmental protection, should accordingly be fostered, including *inter alia* by promoting environmental education of the public." [CD 2003/35/EC]

One more directive provides possibilities for public discussion of nuclear power and its consequences. This is the directive on the assessment of the effects of certain plans and programs on the environment, which the member states have to implement in their national laws until July 2004.

¹ This description should cover the direct effects and any indirect, secondary, cumulative, short, medium and long-term, permanent and temporary, positive and negative effects of the project.

The scope of the directive is defined as follows:

„ ... an environmental assessment shall be carried out for all plans and programs, ... which are prepared for agriculture, forestry, fisheries, energy, industry, transport, waste management, water management, telecommunications, tourism, town and country planning or land use and which set the framework for future development consent of projects listed in Annexes I and II to [CD85/337/EEC] ,...“ [CD 2001/42/EC article 3]

Nuclear power and radwaste management is not especially listed as a subject of the directive, but energy policy and waste management plans are. Therefore the directive gives us various arguments to demand assessment processes regarding nuclear power (energy policy, planning of new NPPs) and nuclear waste management.

As a consequence of this directive you can also argue that a radwaste or spent fuel management plan has to be subject to an environmental assessment, since it will set a framework for projects which are subject to EIAs (interim storage, processing of SF, final repositories of radwaste and SF)

In the following we quote the most relevant obligations for the assessment according to the directive [CD 2001/42/EC] [the time-point for the assessment, the content of the assessment, the consultation process & decision making)

General obligations

‘1. The environmental assessment referred to in Article 3 shall be carried out during the preparation of a plan or program and before its adoption or submission to the legislative procedure.’ [CD 2001/42/EC article 4]

Environmental report

‘Where an environmental assessment is required under Article 3(1), an environmental report shall be prepared in which the likely significant effects on the environment of implementing the plan or program, and reasonable alternatives taking into account the objectives and the geographical scope of the plan or program, are identified, described and evaluated. The information to be given for this purpose is referred to in Annex I.’ [CD 2001/42/EC article 5]

Information referred to in Article 5(1)

- ‘(a) an outline of the contents, main objectives of the plan or program and relationship with other relevant plans and programs;
- (b) the relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the plan or program;
- (c) the environmental characteristics of areas likely to be significantly affected;
- (d) any existing environmental problems which are relevant to the plan or program including, in particular, those relating to any areas of a particular environmental importance, such as areas designated pursuant to Directives 79/409/EEC and 92/43/EEC;
- (e) the environmental protection objectives, established at international, Community or Member State level, which are relevant to the plan or program and the way those objectives and any environmental considerations have been taken into account during its preparation;
- (f) the likely significant effects on the environment, including on issues such as biodiversity, population, human health, fauna, flora, soil, water, air, climatic factors, material assets, cultural heritage including architectural and archaeological heritage, landscape and the interrelationship between the above factors;

(g) the measures envisaged to prevent, reduce and as fully as possible offset any significant adverse effects on the environment of implementing the plan or program;

(h) an outline of the reasons for selecting the alternatives dealt with, and a description of how the assessment was undertaken including any difficulties (such as technical deficiencies or lack of know-how) encountered in compiling the required information;....'

[CD 2001/42/EC ANNEX 1]

Consultations

'1. The draft plan or program and the environmental report prepared in accordance with Article 5 shall be made available to the authorities referred to in paragraph 3 of this Article and the public.

2. The authorities referred to in paragraph 3 and the public referred to in paragraph 4 shall be given an early and effective opportunity within appropriate time frames to express their opinion on the draft plan or program and the accompanying environmental report before the adoption of the plan or program or its submission to the legislative procedure.

4. Member States shall identify the public for the purposes of paragraph 2, including the public affected or likely to be affected by, or having an interest in, the decision-making subject to this Directive, including relevant non-governmental organizations, such as those promoting environmental protection and other organizations concerned.'

[CD 2001/42/EC article 6]

Decision making

'The environmental report prepared pursuant to Article 5, the opinions expressed pursuant to Article 6 and the results of any transboundary consultations entered into pursuant to Article 7 shall be taken into account during the preparation of the plan or program and before its adoption or submission to the legislative procedure.' [CD 2001/42/EC article 8]

The nuclear package

8 out of 15 EU member states use nuclear power: Belgium, Finland, France, Germany, Netherlands, Sweden, Spain, UK. But only three of these have not decided for phasing out nuclear power.

In 1980 Sweden's population voted for a shutdown of the NPPs in the next 25 years. Italy renounced nuclear energy following a referendum in 1987. Germany has announced its decision to shut down its last reactors in 2021 and in Belgium agreement has been reached to do the same in 2025.

The Directive on the safety of nuclear installations during operation and decommissioning:

'This directive will introduce common safety standards and monitoring mechanisms which will guarantee that common legally enforceable methods and criteria will be applied throughout the enlarged Union. Each Member State will be required to have an independent safety authority. A common frame of reference for these safety standards has been built up by the existing standards, those developed by the International Atomic Energy Agency (IAEA), and those developed over 25 years by national safety authorities in working groups organized by the Commission and by the Western European Nuclear Regulators' Association (WENRA).

Like the existing national systems, a Community approach to the safety of nuclear installations during operation and decommissioning must consist of two components. First, a set of standards and, second, mechanisms for monitoring compliance with them and imposing penalties for any failure to do so. Community control will consist of verifying the methods whereby the safety authorities conduct their mission, it will not aim to verify in situ the safety conditions of nuclear installations. Co-ordination of the national systems within a Community framework is a gage to maintain a high level of safety of nuclear installations.'

[Memo]

'Every two years the Commission will publish a report on the nuclear safety situation in the European Union.'

[Memo]

The Directive on radioactive waste:

'This directive will help to produce a clear, transparent response in reasonable time to the issue of how to deal with radioactive waste. This proposal gives priority to geological burial of waste as the safest method of disposal given the present state of knowledge. It provides that Member States should adopt, according to a preset timetable, national programs for the storage of radioactive wastes in general and deep burial of highly radioactive wastes in particular. They are required to decide on (national or regional) burial sites for highly radioactive wastes at the latest by 2008 and to have the sites operational at the latest by 2018. For low-activity, short-life waste, storage arrangements must be ready at the latest by 2013. To increase coordination and financial support for research, the Commission intends in due course to propose the creation of a Joint Undertaking to manage and steer funding for research programs on radioactive waste management from the Joint Research Centre, the Member States and industry.'

[Memo]

Mrs. Palacio, Energy Commissioner of the EU, believes that the solution of the nuclear waste problem will increase public acceptance of nuclear energy in the EU. In order to achieve activities in all European Countries the Commission prepared a Council Directive on the management of spent fuel and radioactive waste.

‘In the Commission’s recent Green Paper on the future security of energy supply in the European Union (EU), the need to find acceptable solutions to the management of radioactive waste was identified as the principle concern affecting the nuclear option. Also highlighted was the need for maximum transparency in the identification of solutions and that further research was an essential ingredient in resolving the outstanding technical issues and also in raising the level of public and political confidence in the solutions. A recent EU-wide public opinion survey has confirmed the importance of the radioactive waste issue in the eyes of the public.

Irrespective of future strategies regarding energy production, the waste that exists now must be dealt with in a way that respects the basic principles of protection of human health and the environment.´ [COM(2003) 32 final, explanatory memorandum to the ´waste directive´]

In its content the Directive is not very different from the IAEA's waste convention, despite one very important issue: the EU Directive sets time-limits for the development of the waste management plan:

‘Member States shall integrate the following decision points into their programs:

- (a) authorization for development of appropriate disposal site(s) to be granted no later than 2008. In the case of geological disposal of high-level and long-lived radioactive waste, this authorization may be conditional upon a further period of detailed underground study;
- (b) in the case of short-lived low and intermediate-level radioactive waste, if this is to be disposed of separately from high-level and long-lived radioactive waste, authorization for operation of the disposal facility to be granted no later than 2013;
- (c) in the case of high-level and long-lived radioactive waste, to be disposed of in a geological repository, authorization for operation of the disposal facility to be granted no later than 2018.´ [COM(2003) 32 final ´waste directive´ Art. 4]

In the revised proposal of the nuclear package public participation is mentioned in Article 3 of the waste directive as the last of several other general requirements:

´General requirements for the management of spent nuclear fuel and radioactive waste

1. Member States shall take all necessary measures to ensure that spent nuclear fuel and radioactive waste are managed in such a way that individuals, society and the environment are adequately protected against radiological hazards.
2. Member States shall ensure that the production of radioactive waste is kept to the minimum practicable.
3. Member States shall take all the necessary legislative, regulatory and administrative measures and other steps required to ensure the safe management of spent nuclear fuel and radioactive waste.
4. Member States shall establish or designate a regulatory body entrusted with the implementation of the legislative and regulatory framework, and provided with adequate authority, competence and financial and human resources to fulfil its assigned responsibilities.

5. Member States shall ensure that adequate financial resources are available to support the safe management of spent nuclear fuel and radioactive waste, including that from decommissioning activities, and that financing schemes respect the "polluter pays" principle.
6. Member States shall ensure that there will be effective public information and, where appropriate, participation in order to achieve a high level of transparency on issues related to the management of spent nuclear fuel and radioactive waste under their jurisdiction. [COM(2003) 32 final 'waste directive' Art. 3]

Point 2, which is stressed in particular in the revision of the proposal by the Working Party on Atomic Questions, demands the minimization of radioactive waste. We think that is a very good argument for the phasing out of nuclear power. Countries without nuclear power create less than 10 percent of the volume of radioactive waste than countries with NPP. This is also practicable. The discussion of the European Parliament after the Italian blackout delivers some very good arguments:

'The cost of saving off-peak electricity by demand management is often half of the kWh price consumers pay to use electricity. Reducing peak consumption by saving energy can be 75% cheaper than buying it. In addition, implementing energy efficiency measures is normally a faster and easier process than increasing supply' (Information memo from Mrs. De Palacio to the Commission after US blackout 14 August 2003) 'quoted in [Turmes 2003]

'All experts agree, that it is the most efficient way to make production of electricity happen as close as possible to the points of consumption in order to minimize stability risks to the grid management and thus insure security of supply. Most decentralized power productions - gas driven gas and steam turbine up to 350 MW, large and small scale heat and power productions, micro cogeneration (as a pre-stage to fuel cells) and renewables (biomass, small scale water, wind, solar) will enhance not only security of the grid, but also bring Europe back on the Kyoto track.' [Turmes 2003]

Even if point 6 of article 3 is a progress compared to the draft proposal it is not enough:

We demand an obligation to integrate a participation procedure in every planning process regarding spent fuel and high level waste management.

The so-called Palacio package contains beside the proposal for the directive on nuclear waste management a proposal for a directive on the harmonization of safety standards in the EU. The fate of this directives, at the moment is undecided. The European parliament is discussing the proposals very controversial.

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Informing the general public about health protection measures to be applied and steps to be taken in the event of a radiological emergency.

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NUCLEAR RISK AND PUBLIC CONTROL -

nuclear safety and waste management

A joint project of Central European NGOs

Part II

National Report – Czech Republic

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1 The Nuclear Regulatory Body

The Atomic Law

In 1997, the Czech Parliament passed an Atomic Law (officially ACT No. 18/1997 Coll. on Peaceful Utilisation of Nuclear Energy and Ionising Radiation), a key piece of legislation related to the nuclear industry. The law was novelized and amended in December 2001.

According to SUJB (the State Office for Nuclear Safety), the Czech Atomic Law and related binding resolutions are 'comparable to legislation in EU countries'. However, there are several weak points in the Atomic Law. These weak points were a target of criticism by NGOs during the novelization of the Atomic Law in 2001. Yet they were not addressed and today (autumn 2003) continue to be a part of the law.

The criticised points are:

- the Law disables participation in the licensing processes for the public or local governments/municipalities that are affected
- the Law does not require that a future operator of nuclear reactors proves the possibility to securely dispose of the generated nuclear waste
- the Law limits the liability of the operator for damages to 6 billion CZK maximum (180 million ECU); this limit is applied also to the liabilities covered by the State in case the operator is not able to cover them; the liability is also limited by a 10 year's deadline for request on compensation;
- The Law defines inadequately low fines for not fulfilling requirements. The maximum fine of 10 million CZK for not meeting requirements of nuclear safety conditions defined by SUJB etc.

The Regulatory Agency (SUJB)

The central state oversight body is SUJB (the State Office for Nuclear Safety). Its key competencies are defined by the 1997 Atomic Law and include (among others):

- oversight of safety of nuclear devices, materials, radiation protection and on-site emergency planning
- granting of licenses related to nuclear devices and nuclear materials
- coordination of the national radiation monitoring network
- definition of limits, rules and conditions for handling nuclear devices and materials

SUJB acts as an independent body, responsible directly to the Czech government. It cooperates mostly with the Ministry of Industry and the Ministry of Defense. The head of SUJB is appointed by the Czech government.

SUJB has about 190 full time employees; out of these, about 120 are safety and radiation safety inspectors. The annual budget for 1998 is ECU 5.5 million. The SUJB has its main office in Prague, with six others in the regional capitals, and two other branches at Dukovany and Temelin NPP sites.

SÚJB and the public

SÚJB is obliged to give out information according to special legal provisions and once a year to publish a report on its activities and submit it to the Government and to the public.

The „special legal provisions´ are:

Act No 213/1998 Coll., on the right on information about the environment, as amended by Act No 132/2000 Coll.

Act No 106/1999 Coll., on free access to information, as subsequently amended

Though SÚJB publishes some information, there is a long history of its unwillingness to provide requested information to non-governmental organizations. In such cases SÚJB sometimes refers to ´sensitive intelligence´ or ´business secret´ (of the operator) while at other times it does not react to requests for information at all.

The real opportunity for general public to influence decisions made by SÚJB is almost none. SÚJB closely cooperates with CEZ, the operator of two Czech Nuclear power plants – and they are connected by a network of interpersonal relations.

On the other hand, the Czech government is a direct superior body to SÚJB and therefore can theoretically influence its decisions essentially. Therefore there is a theoretical chance to influence activities of SÚJB via pressure on the Czech government.

Nevertheless the relationships between government and SÚJB seemed too informal at the time when Temelin NPP was at the final stages of its construction. As all three – Czech (social democratic) government, CEZ and SÚJB – supported the completion of Temelin NPP, the will for independent evaluation and open informing of the public was missing.

Temelin NPP & public participation

There has been a long history of pressure against public participation in the modern history of the Czech Republic. After the velvet revolution of 1989 the situation improved, but the nuclear industry partly continues to be an exception. The construction of the Temelin power-plant has been repeatedly connected with efforts to build information barriers between the project and the public. Environmental NGOs had to file several lawsuits against CEZ (the operator), SÚJB (the State Office for Nuclear Safety) and even the provincial authorities that were not willing to provide important facts about the course of the construction and certain important parts of the project.

Illegal refusal of information request by Calla Association concerning Temelin NPP (July 2000)

On July 5th 2000, SÚJB issued a decision which allowed the utility CEZ to begin the active physical start-up of the Temelin-1 reactor. Yet at that time there were doubts among concerned public that the reactor and its equipment had not been fully prepared and tested for the start-up of „active testing´ (with nuclear chain reaction). There was clearly a lot of pressure both from CEZ (for economic reasons) and the Czech ministry of industry (as the then minister Miroslav Gregr made a bet that the deadlines for the reactor start-up he announced year ago would be kept) put on SÚJB not to postpone the start-up of the already delayed reactor any more. On July 11th 2000 the environmental association CALLA has formally asked SÚJB about certain details of the July 5th-decision and also about the content of several documents, on which the decision was officially based.

But SÚJB has never provided the requested materials to CALLA. Instead it asked CEZ about the status of the information written in these materials (this is a clear contradiction to the process set by law - companies must in such cases define area of „business secret´ in advance, not retroactively). In its answer to SÚJB, CEZ declared these documents as a „business secret´ and asked the office for secrecy. On July 21st 2000 SÚJB refused CALLA's request pointing to this letter from CEZ.

According to a legal analysis, none of the following acts - No. 213/1998, No. 106/ 1999 (both on the right to free access to information) and No. 18/1997 (Atomic Law) - justifies the refusal. CALLA has appealed to the court against the acting of SÚJB but the process has been still pending at the Czech Constitutional court in October 2003.

The public was not given a chance to decide about the fate of Temelin plant even though during the year 2000 almost 120.000 people have signed one of the biggest petitions in the Czech history asking for national referendum on the question whether to complete and start to operate the disputed, Soviet-designed power-plant. The government has simply ignored the petition and decided to finish the construction of Temelin NPP.

2 Waste Management

The Radioactive Waste Repository Authority (SÚRAO)

The Czech Atomic Law (18/1997 Coll.) assigns responsibility for final disposal of all radioactive waste (RAW) to the state and charges the Ministry of Industry and Trade to establish a state agency for this purpose – the Radioactive Waste Repository Authority (SÚRAO). Activities performed by SÚRAO are funded from the Nuclear Account, into which the generators of radioactive wastes have to pay into. SÚRAO is holding an approved proposal by the State Office for Nuclear Safety (SÚJB) for the sealing of repositories. The Czech Government authorizes the SÚRAO budget, as part of the national budget.

The Director and the Board are the bodies of SÚRAO. They are appointed and recalled by the Minister of Industry and Trade. The Board is composed of 11 members; three are representatives of the State administration, four represent the general public, and four represent radioactive waste producers. Appointment of the Board members is based on a proposal of related subjects or groups of subjects representing the State administration, general public, and waste producers.

The Czech Concept for Radioactive Waste and Spent Fuel Management

The Concept for Radioactive Waste, adopted by the Czech government on 15 May 2002 (Government Resolution No. 487), is the basic document defining the strategy of the state and its agencies in radioactive waste management until about 2025, with an outlook to the end of the 21st century, in respect to generators of RAW and SF. The Policy sets out plans for the treatment of low- and intermediate-level waste as well as the storage of spent fuel and high level waste.

Management of Low- and Intermediate-level radioactive wastes (LILW)

Short-lived low- and intermediate-level wastes represent the biggest category in terms of volume. They are generated in liquid or solid form during operation and decommissioning of nuclear reactors and during handling of ionizing radiation sources. These RAW may be deposited after treatment in surface or near- surface repositories. Technologies of their treatment before disposal have been developed in the Czech Republic.

Short-lived RAW is at first stored and once the activity decreases below a certain level it is released for recycling or deposited in dumps for non-radioactive waste. To a smaller extent, some LILW is generated which are not acceptable for the now operated near-surface repositories. For this waste requirements for the treatment have yet to be defined, which allow the subsequent disposal in a deep repository. Today this type of waste is in most cases stored by its generators.

Time-table for LILW- Management

Target	Date
To operate existing near-surface repositories in compliance with requirements for radiation protection and relevant licenses issued by the SÚJB and the Czech Mining Office (CBÚ)	continually
Coordination and implementation of a research program on minimising the production of radioactive waste and the development of new methods for radioactive waste processing	continually
Preparation of schedule for final closure of parts of repositories Richard and Bratrství with radioactive waste disposed of before the Atomic Act came into force	2003
To create the necessary conditions for operation of the system of central processing of radioactive waste for generators from outside the nuclear power engineering sector (small generators) supervised by SÚRAO	2003
To allocate or build storage capacity for radioactive waste that cannot be accepted at existing near-surface repositories	2004

Management of spent nuclear fuel (SF) and other high-level wastes (HLW)

Czech NPPs are operated using an 'open nuclear fuel cycle'. Today, the spent fuel (SF) is stored in interim storage facilities, which helps the operators to delay a clear decision. Nevertheless the basic strategy for SF is disposal in a deep geological repository (DGR). The reason is that even in case of reprocessing, certain amounts of SF and HLW will remain and will have to be stored in DGR. The first SF is expected to be handed over for disposal around 2065.

HLW from the operation of power generating and research reactors is the most hazardous category of RAW. Due to its high activity levels and high content of long-lived radionuclides it is now assumed that the waste will be disposed in deep underground geologic formations. For direct disposal of SF or treated HLW special packing sets (casks) as well as structural and insulating materials are being developed and verified.

Time table for High-Level Waste and Spent Nuclear Fuel Management

Target	Date
To construct a spent nuclear fuel storage facility as per Government Decree No. 121/1997 and Government Decree No. 695/2001	2005 and ongoing
To support and coordinate the involvement of research institutions in the development of new techniques for spent nuclear fuel reprocessing and transmutation and use all the available technologies for lowering the risk of high level waste and spent fuel	continually
To select sites with proper geological conditions taking into account local developments at proposed sites. After evaluation of relevant results include two sites into land use plans (main and reserve one) for deep geological repository	2015
On the basis of geological work performed and complex data analysis confirm the suitability of one site for a geological repository	2025
To prepare the necessary documentation for construction of an underground research laboratory and performance of long term experiments for confirmation of safety of deep geological repository	2030
Operation of deep geological repository	2065

Plans for finding a final repository for Spent Fuel

Repository Location

The Czech nuclear waste management policy anticipates operation of a deep geological repository by 2065. The repository is expected to accommodate all radioactive wastes that cannot be deposited in near-surface repositories: Spent fuel without reprocessing or alternatively HLW from potentially reprocessed SF from Dukovany and Temelin, and HLW from other nuclear sources.

The overall amount of SF from four units of NPP Dukovany is estimated at 1940 t heavy metal and from two units of NPP Temelín 1787 t heavy metal on condition that all the units will be operated for 40 years.

SÚRAO is the office responsible for research of future deep repositories of HLW and SF. The development of deep geological repository in the Czech Republic is expected in granitic rock formations. Based on earlier acquired geological data 30 locations had been identified in the Czech Republic, while eight of them were selected by 1998 for more detailed investigation. In April 2003, two of the localities (Klenová, Kunejov) were ruled out (probably for political reasons – vicinity to Czech-Austrian border), one was added and 5 others were defined as reserve localities.

Today there are 6 localities considered as the 'main candidates' – Budišov, Rohozná, Lodhérov, Vlksice, Pacejov and Lubenec-Blatno. All of them are situated on granitic bedrock.

The preparation of a deep repository in the Czech Republic will, according to SÚRAO, take place in four stages:

- Surveying of candidate locations, evaluation of their suitability and proposed structure of engineering barriers,
- Selection of the final location and the corresponding structure of engineering barriers,
- Confirmation of safety of the deep repository with safety analyses,
- Proposal of a technical solution of the engineering equipment and civil engineering objects, infrastructure and architectural design of the facility,
- Development of the respective documents and obtaining of required approvals associated with the project (land use plan, zoning and planning decision, building permit – see the Building Act and Mining Act, impacts on the environment, etc.).

Today the deep repository is planned to be put into operation by the year 2065.

Waste management & public participation

Decisions concerning the nuclear waste

The experience for NGOs & the public in the Czech Republic made with participation in licensing processes for NPP were not very favorable. The prospects for public participation do not seem higher when it comes to the plans concerning the nuclear waste. In the current Atomic Act (18/1997 Coll.) or other regulations there is not any binding condition that would restrict the state (SÚRAO) from placing the repository in a certain locality if the local inhabitants do not agree with it.¹ Several environmental organizations are trying hard to propose an amendment to the current Atomic Act, which would bind the state to respect the results of local referenda. The support for such amendments is slightly growing among members of the Czech Senate, so in the near future the effort to push them through

¹ The concerned municipalities and other public are excluded from all licensing processes under the Atomic Act (e.g. about locating and construction of a nuclear facility or its put into operation) where it explicitly states that 'the applicant is the only participant of the licensing process [on approval to the activity]' (§14 (1) of the Atomic Act).

in the Czech Parliament might be repeated (such a Regulation was unsuccessfully proposed in the past).

At the moment there is a chance for local communities to organize a referendum but its results are binding only for the local municipality and the state can overrule them, as the DGR is considered a project of 'national interest'.

On the 25th August 2003 SÚRAO presented the narrowed-down list of 6 localities, which will be further researched as possible future sites of the national DGR. Since that time the activities of the communities against the plans for DGR have increased. A high percentage of local inhabitants and political representatives have signed petitions listing their arguments against DGR. During the summer 2003 the concerned villages have started to prepare local referenda. The first such referendum has taken place in Oslavicka village (situated inside the proposed locality Budisov). Out of 80% of local inhabitants who took part in the referendum, 98.46% voted against the building of DGR in the locality. Other municipalities have announced to organize local referendums in the coming months. People in the considered localities have also started to press for amendments of the Atomic Act so that the results of local referenda concerning the repository would become binding for the state.

As of today the public has its official representatives in the board of SÚRAO (see Chapter 4). However, there are no representatives of the villages, where the DGR might be sited. The SÚRAO board members are replaced once in 5 years. Out of the 4 representatives of the public in the board one is nominated by the two chambers of the Czech Parliament while three others represent the localities with currently operating storage facilities. This means that the representatives of the areas concerned about DGRs have very limited options for asserting their voice and taking part in the decision processes. Though they might have been consulted often in the last months, they don't get any legislative backing for their opinions.

Disregarding other options for management (long-term storage)

Disposing of the high-level waste into the DGR is not the only option for its treatment. Although it is the favored option worldwide, it is still considered problematic and other options are being examined as well. The Czech Concept does not seriously consider other options of HLW treatment and therefore it does not clearly show that the proposed option of the deep geological repository is the best one for the country. Other possibilities for treatment of HLW currently (or in foreseeable future) available would be: deep disposal with an option of future retrieval and re-use; long-term storage in surface or near-surface repositories; re-processing and re-use; treatment with transmutation technologies. Many projects researching these alternative possibilities of HLW treatment take place worldwide. Even though neither of these options would prevent the necessity to store some amounts of long-term HLW, they should be seriously compared with the current option of placing all the HLW into the DGR. Otherwise it is impossible to apply the BAT (best-available-technology) principle which is the crucial strategy for complying with the imperative for sustainable development, proposed by the basic regulations of the European Union.

Unclear amount of waste

The current plans of SÚRAO for the project of the national DGR with HLW consider the amount of waste coming mostly in the form of spent nuclear fuel of the 2 Czech power-plants and the HLW material from decommissioning of these plants. Much smaller amount of the waste would be formed by so-called institutional waste (medicine, industry etc.)

The overall amount of spent fuel from four units of NPP Dukovany is estimated at 1940 t heavy metal and from two units of NPP Temelín 1787 t heavy metal on condition that all the units will be operated 40 years. Another 2700 m³ of high level wastes is estimated to result from the decommissioning of the reactors. A major quantity – thousands of m³- of medium-level waste resulting from operation and decommissioning also will have to be stored. The DGR must be planned to be able to contain all these wastes plus smaller amounts institutional waste.

However, in June 2003 the Czech Ministry of Industry has presented his plans for the new Czech national energy policy until 2030. The Ministry has prepared several scenarios and most of them

support building of new nuclear reactors by 2020. The most pro-nuclear scenario proposes 8 reactors. The so-called 'green scenario', which is favored by the Ministry, expects 3 new reactors to start operation between 2017 and 2025.

The operation of more reactors than the six already existing in the Czech Republic (4 in Dukovany, 2 in Temelin) would dramatically increase the amount of all radioactive waste types, including high level waste and mainly spent fuel. The amount of HLW and SF would grow by up to 60% (in case of 8 new reactors even by 150%) and this would of course have a crucial impact on the waste management. This shows that the current Concept of the waste management is just a piece of paper and is not consistent with the future energy policy.

Financing of the future Storage and Decommissioning

Money in the Nuclear Account comes basically from generators of radioactive waste, and also from the investments of the accumulated money on the financial markets. However, there are restrictions on how to invest the funds of the Nuclear Account and these are stipulated in Section 27, paragraph 4 of the Atomic Law.²

The amount of money and the terms of payment into to the Nuclear Account by Radioactive Waste Originators are stipulated in the Government Decree No. 224/1997 Coll. It charges the operators of nuclear power-plants to allocate CZK 50 (ECU 1.7) per 1 MWh of produced electricity to the Nuclear Account. In this way the planned amount of 46.95 billions for the DGR is expected to have accumulated in the Account during the operation of the existing nuclear power-plants – NPP Dukovany and NPP Temelin.

The reserve for the decommissioning of Dukovany and Temelin nuclear power-plants is stipulated in the Chapter 5.4 of the Concept of Radioactive Waste and Spent Nuclear Fuel Management in the Czech Republic. It was estimated by SÚJB at CZK 12.5 billions for Dukovany and 11.1 billions for Temelin.

Possible insufficiency of the Financial Funds

According to Chapter 5.3 of the Concept of Radioactive Waste and Spent Nuclear Fuel Management in the Czech Republic, the total costs for research, construction, operation and close-up (sealing) of the DGR are estimated at CZK 46.95 billions (1.5 billion ECU). Yet this is the estimate of generally pro-nuclear SÚJB (State Office for Nuclear Safety), SÚRAO and the Ministry of Industry Trade under pro-nuclear ex-minister Miroslav Grégr. In the past other estimates were provided with expected costs of up to CZK 100 billions (3.3 billion ECU). A study made by the Institute for Nuclear Research in Prague-Rež mentions substantially higher estimates for the repositories in Western European countries with storage capacities for high-level waste comparable to the CR. Moreover, a price increase for construction works is quite likely to occur after the Czech Republic joined the EU.

As was explained before the operators of nuclear power-plants are allocating parts of their revenues to the Nuclear Account. These amounts are based on the estimation of total costs. If the future proves the sum of 46.95 billions as underestimated which seems probable, it will be in the responsibility of the state (i.e. taxpayers) to bear the extra costs.

Funds for decommissioning of the plants

² The balance of the nuclear account run as State financial assets may be invested on the financial market, but only in liquid government bonds, bonds of the Czech National Bank, State guaranteed bonds, or in securities of issuers whose rating level granted by a rating agency selected by the Ministry of Finance is at least as good as that of the Czech Republic. The Ministry of Finance may carry out financial investment through the intermediary of other persons. The manner of investment and its profitability shall be subject to supervision by the Ministry of Finance (Section 27, paragraph 4 of the Act no. 18/1997 Coll. - Atomic Act).

The target amounts of reserve funds for decommissioning the two Czech nuclear power-plants, NPP Dukovany and NPP Temelin, are also unreasonably low. They are stipulated in the chapter 5.4 of the Concept of Radioactive Waste and Spent Nuclear Fuel Management in the Czech Republic. The amounts of 12.5 billion CZK (ECU 400 millions) for Dukovany and 11.1 billion (ECU 360 millions) for Temelin were estimated by the State Office for Nuclear Safety (SÚJB). Experience from other countries that have already started decommissioning nuclear power-plants show that the costs are much higher and usually exceed equivalents of 1 billion ECU.

Limited liability of the operator

The liability for wrong estimates concerning the costs of treatment of spent fuel is to a large extent delegated from the originators of the wastes over to the state or rather its taxpayers. If the regular payments of the NPP operator to the Nuclear Account prove insufficient in future it will be the state that will cover the missing costs.

Another example of a hidden support for nuclear operators based on legislation is the Section of the Czech Atomic Act on the financial liability in case of potential accidents. The section stipulates that:

The liability of a licensee for nuclear damage caused by each single nuclear event shall be limited in the case of

- a) nuclear installations used for power generation purposes, storage facilities and repositories of spent nuclear fuel assigned to these installations, or nuclear materials generated by processing of this fuel, to the sum of CZK 6,000 million;
- b) Other nuclear installations and shipments, to the sum of CZK 1,500 million.

The 6 billion CZK (ECU 200 million) ceiling for potential financial liability does not exist in any other sphere of human activities.

3 References

List of legislation (Acts, Regulations and Government's Decrees) pertaining to radioactive waste management

- Act 18/1997 Coll. Peaceful Use of Nuclear Energy and Ionizing Radiation Act (Atomic Act) and Amendments
to Certain Acts, as amended by (Act No. 83/1998 Coll., Act No. 71/2000 Coll., Act No. 132/2000 Coll., Act No. 13/2002 Coll., Act No. 310/2002 Coll., Act No. 320/2002 Coll.)
- Reg.142/1997 Coll. SÚJB Regulation of Type Approving of Sets for the Shipment, Storage or Disposal of Radionuclide Radiators and Nuclear Materials, Type Approving of Protective Aids for the Work with Ionizing Radiation Sources and Other Devices for the Work with Them (Type Approving)
- Reg.143/1997 Coll. SÚJB Regulation of the Transportation and Shipment of Selected Nuclear Materials and Selected Radionuclide Radiators
- Reg.144/1997 Coll. SÚJB Regulation of the Physical Protection of Nuclear Materials and Nuclear Facilities and Classification Thereof
- Reg.145/1997 Coll. SÚJB Regulation of the Recording and Control of Nuclear Materials and Further Specifications Thereof
- Reg.146/1997 Coll. SÚJB Regulation Listing the Activities Directly Affecting the Nuclear Safety and Activities Specially Important with Regard to Radiation Protection, Requirements for the Qualification and Professional Training, Way of Certifying the Special Professional Qualification, and Licensing Selected

- Workers, and the Way of Preparation of the Documentation to be Approved for Permitting the Training of Selected Workers
- Reg.147/1997 Coll. SÚJB Regulation Listing Selected Items and Double-Use Items in the Nuclear Field
- Reg.184/1997 Coll. SÚJB Regulation of Requirements for Radiation Protection
- Reg.214/1997 Coll. SÚJB Regulation of Quality Assurance in the Activities Related to the Use of Nuclear Energy and Activities Resulting in Irradiation, and of Criteria for Classification of Selected Facilities
- Reg.215/1997 Coll. SÚJB Regulation of Criteria for the Location of Nuclear Facilities and Very Significant Sources of Ionizing Radiation
- Reg.219/1997 Coll. SÚJB Regulation of Particulars to Provide for Emergency Preparation of Nuclear Facilities and Workplaces with Ionizing Radiation Sources and of Requirements for the Contents of Internal Emergency Plan and Emergency Rules
- 22/1997 Coll. Technical Requirements for Products Act
- 224/1997 Coll. Government's Decree Stipulating the Amount and Way of Payments to the Nuclear Account by Radioactive Waste Originators
- Reg.106/1998 Coll. SÚJB Regulation of Providing for Safety and Radiation Protection of Nuclear Facilities in Their Putting into Operation and During Their Operation
- 11/1999 Coll. Government's Decree About the Emergency Planning Zone
- Reg.195/1999 Coll. SÚJB Regulation of Requirements for Nuclear Facilities to Provide for Nuclear Safety, Radiation Protection and Emergency Preparation
- Reg.196/1999 Coll. SÚJB Regulation of Shutting Down Nuclear Facilities or Workplaces with Significant or Very Significant Sources of Ionizing Radiation
- Reg.324/1999 Coll. SÚJB Regulation Stipulating Limits for the Concentration and Amount of Nuclear Materials That Are Not Subject to Nuclear Damage Provisions

NUCLEAR RISK AND PUBLIC CONTROL - nuclear safety and waste management

A joint project of Central European NGOs

Part II

National Report on Hungary

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1 The Nuclear Regulatory Authority

The Act on Atomic Energy

Since 1997 the Act on Atomic Energy determines the conditions for the safe and peaceful use of nuclear energy in Hungary. The law assigns the government with the right to oversee and supervise, and determines clearly the relations between the Hungarian Atomic Energy Authority (HAEA), the regulatory body, and the Hungarian Atomic Energy Commission (HAEC) – dealing with decision preparing and supervising rights over the HAEA, with the participation of the responsible ministers –, the supervisory body.

Independent from this year's INES 3 incident at Paks NPP (for which both the NPP and the HAEA were responsible), the situation changed this year. The HAEA remained the official governmental body responsible for the administrative tasks in the field of nuclear energy use. The HAEC was abolished; its main competences were either cancelled or transferred to the HAEA.

To replace the HAEC, the law created the Atomic Energy Co-ordinating Council (Council), with a more limited sphere of authority: to co-ordinate the work of the HAEA, the responsible ministries and other administrative bodies.

The Council is headed by the Director General of the HAEA; the members of the Council are appointed by the minister in charge of supervising the HAEA (now the Minister of internal affairs), the Minister of Internal affairs, the Minister of Agriculture, the Minister of Defense, the Minister of Economy, the Minister of Environment, the Minister of Health, the Minister of the Civil National Security Services, and the head of the mining authority. The mining authority is a member in the Council because of its role in the siting of nuclear facilities, where mining aspects (technical and safety) are important.

The operation of nuclear facilities is also in the competence of other state legislations. Since a nuclear power plant is an energy producing installation, the licensing rights over the NPP under the aspect of energy economy (e.g. capacity-extension) lies with the Hungarian Energy Office (HEO), empowered by The Act on Electric Energy. The NPP is also bound to supply data to the HEO.

The Act on Electric Energy gives the minister of economy special power over the electric energy sector (including the NPP) with the right of price-fixing for both retail and wholesale trade. The Act on Atomic Energy gives the Ministry of Health power in the field of radiation protection.

The Act on Atomic Energy authorises the Ministry of Environment to determine the limit values of (both liquid and gaseous) radioactive releases.

To supervise the HAEA's work, the Prime Minister appointed the Minister of Internal Affairs, unlike in former practice, where the Minister of Economy (who is also responsible for energy supply) was chosen to act as President of the HAEC. The reason of the appointment is that the ministry of internal affairs is responsible for Emergency Prevention. Also the Prime Minister appoints the Director General of the HAEA.

The Hungarian Atomic Energy Authority (HAEA)

The HAEA's task is to ensure the safety of the institutions and the handling of radioactive materials, and to co-ordinate and perform the related information work, while the Act on Atomic Energy primarily makes the Licensees – the institutions using nuclear energy and handling radioactive materials – responsible for the safe use of nuclear energy.

The HAEA's scope of competence includes:

- the nuclear safety licensing;
- supervision of nuclear installations;
- the registration of radioactive substances;
- licensing of the transportation and packaging of radioactive substances;
- the licensing of nuclear exports and imports;
- the evaluation and co-ordination of research and development;
- the performance of authority-specific tasks related to the preventing of nuclear accidents;
- maintenance of international relations.

The HAEA's duties are shared between the Director General and two directorates (with two Deputy Director General), the General Nuclear Directorate and the Nuclear Safety Directorate.

The General Nuclear Directorate keeps the record of nuclear and radioactive materials, works on the issues of the accession to the EU and of the theoretical radiation protection, and communicates with external bodies.

The Nuclear Safety Directorate – as the regulatory body dealing with every question related to the safety of nuclear installation – is responsible for the licensing, for the inspections, has a department of technical support and works on strategic questions.

The remaining issues belong to the Director General: the legal issues, the HAEA's own finances and matters related to management of the quality control.

The Director General of the HAEA reports every year to the government and the Parliament on the use of nuclear energy, and on the preparatory works. The law forces the HAEA to inform the public about its activities, the main decisions etc., but this obligation is not clearly defined.

The Hungarian administrative system is built of two tiers. In case of the HAEA, the first instance is the concerned directorate; the second instance is the Director General. It means that the petitions or the sanctioning of the licensees are considered by officials of the relevant department, and the resolutions are issued with the subscription of the director of the concerned directorate. In the case of further steps (for example the NPP appeals against the decision) the General Director disposes of the affair.

The Act on Atomic Energy refers some (discipline-based) questions to the authority of the Parliament or the government. Thus the Parliament's preliminary approval is required to 'begin any preparatory work on the establishment of a new nuclear institution or radioactive waste depository, and to enlarge existing nuclear power plant with additional units'. To privatise any nuclear installation, the government's approval is necessary.

Concerning the possibility of checking and sanctioning the activities of Licensees, HAEA is authorised to carry out inspections at every Licensee. The HAEA can fine the Licensee in these cases:

- breaking the law;
- breaking the nuclear safety regulation;
- non - compliance with an official permission;
- The amount of the penalty is minimum 50 000 HUF (approx. 200 €), but it cannot be more than 50 billions HUF (approx. 200 000 €) in the case of nuclear power plants, 5 million HUF (approx. 20 000 €) in the case of other Licensees.

Having read the HAEA regulations, it would seem that all nuclear safety guarantees are covered. The latest changes in the rules happened in accordance – or so they are being justified – with the latest developments in western countries, establishing a modern structure of regulatory institutions. An important and welcome step is that the Minister of Economy, who was both responsible for the production of electricity and nuclear safety, and these two roles seemed to be conflicting, has lost supervisory rights over nuclear energy.

With these changes the HAEA has gained wider independence and power, out from under the HAEC's control. Essentially the full control over the nuclear legislation and enforcement (including its own legislation and activities) became the HAEA competence. The other inherited competencies are of rather theoretical importance (for example the one that forces the HAEA to 'follow with attention the general tendencies of the international improvement in the use of nuclear energy').

In fact, the control of the HAEC was rather more bureaucratic than substantive and the new legal situation just acknowledged the practice. The HAEC – being made up of members without the relevant expertise – served simply as a political supervision, and the decisions in the main questions were made by the proposals of the HAEA, or were decided on other (rather short-term political or financial instead of strategic or professional) basis.

Worrysome is, that the changes do not guarantee an improvement of the situation in the future. Should the HAEA make a mistake, no any official body could prevent the implementation of a wrong decision.

Even though the guidelines determine clearly the necessary level of education and experience of the staff of the HAEA, and also of the so-called Scientific Council (with at most 12 nuclear energy experts) that is available for helping the work of the HAEA, mistakes are not impossible, whether on the level of the daily decision-making, or on a strategic level.

The PAKS 2003 incident:

The problems of the normal routine of the HAEA were presented unequivocally by the INES 3 incident of Paks in April 2003. A substantial examination would have discovered the defects of the cleaning equipment in which 30 fuel assemblies have been damaged.

Equipment for the NPP in Paks is all classified in 4 classes from the view of safety. The 1st and 2nd classes are the parts important for nuclear safety, this are the parts of primary circuit (1st class) and of all other safety systems. In case of modification of these parts, HAEA should carry out substantial examination. For equipment of 3rd class, there is no need for examination from the side of HAEA, those are done by Paks, and the HAEA does not check the assessment, just checks whether they exist. (The 4th level has no importance from safety view). The classification is always done by Paks, but the HAEA may change it, but in this case the HAEA accepted the declaration of Paks as the fuel-cleaning container is less significant in view of safety. The HAEA's error proved to be fatal.

The IAEA report on the recent event concludes that the licensing process must be revised. The rights of licensing possessed by the NPP must be supervised, and in justified cases must be returned to the HAEA, the necessary human and financial resources have to be provided. It is very important to supervise the process of classification of new equipment, and the related licensing processes. The required time for decision-making and licensing must be ensured. The NPP should not put the HAEA under pressure. The responsibilities in the licensing process must be made clear to the officers.

The new version of the Nuclear Safety Regulation must contain adequate regulation for handling such situations when the NPP asks for licensing of untested methods, equipment etc.

The legislative processes must be sped up and should include some public participation elements as well. For example the decree of the Minister of Environment (No. 15/2001) on radioactive releases determined new yearly limit values, and with a validity of 2002 cancelled the former legislation concerning the daily and monthly standards. The constitution of the new rules are still missing, so the highest level where the daily and monthly releases are regulated is the NPP's own Technical and Operational Regulations (that is accepted by the HAEA).

The information policy must be supervised and must be made more open. It cannot be confined to yearly reports on the enumeration of the made decisions, a wider and deeper data supply is required.

This has become much more relevant due to the Paks incident, because the data of the released radioactivity and the information of the circumstances of the event were available just with difficulty and lately. The information and data are not available promptly and officially even for scientific circles.

The involvement of civil organisations in the decision-making process is still absent, contrary to the high importance it has especially in the case of strategic issues.

On the level of the strategic decision-making the biggest 'surprise' is that a clear statement concerning the responsibility of official bodies or agencies on this field cannot be found. The laws order that the decisions – regarding the use of nuclear energy and radioactive materials (waste and spent nuclear fuel included) – must be made on the basis of the latest and justified international developments, but the questionable practice, especially concerning spent nuclear fuel, show that the orders' reading can be wider than desired. The reality is that the strategic decisions are not made on the basis of nuclear safety (with the respect of the minimal criteria) or the financial questions of the management of radioactive waste, but the yearly budget and political and energy related aspects play a more important role in the decision-making. In Hungary the Ministry of environment has no power in decision making of nuclear issues at all.

Although the involvement of civil organisations into the decision-making process would have been welcomed, it did not happen in any form. While there are forums where civil and green organisations can express their opinion on several fields and those can be discussed with administrative bodies (with more or less success), the questions of nuclear energy are always extracted from these discussions. Nuclear energy is still treated as an issue for nuclear and energy experts, rather than an environmental issue. (Surprisingly the Paks incident was offered for discussion in the meeting in May, over the announced agenda, and the greens were not prepared.)

HAEA & the public

Since 2000, the duties in the case of a nuclear catastrophe are regulated by the Act on Preparedness in time of Disaster. Legally, in the case of any kind of disaster, the highest co-ordinating organisation is the Co-ordinating Government Committee. The minister of Internal Affairs directs it; the minister's deputy in case of nuclear disaster is the Director General of the HAEA. The members of the committee are the representatives of the concerned ministries and organisations. In case of nuclear emergency the HAEA Emergency Preparedness Organisation (HAEA EPO) is responsible for the analysis of the situation, and for giving forecasts (plant state estimation, the source term evaluation, evaluation of the radiological consequences and development of countermeasures to protect the population). The HAEA EPO is also responsible for evaluating the situation in case of foreign events, and for international notification. The HAEA EPO contains four groups: the Nuclear Group, the Radiological Group, the Logistic Group and the Management Group.

The HAEA Inspector on Duty of is responsible for receiving reports of nuclear events. The Inspector on Duty is available 24 hours, and has the right to order the necessary actions, but only the Crisis Manager (alerted by the Inspector) may call for mobilising the HAEA EPO, in time of nuclear emergencies. There is a pre-prepared system for alerting and calling in the experts to the emergency centre. The staff of the HAEA EPO regularly takes part in exercises.

Reporting obligations and the order of the information in the case of nuclear emergency is well defined by the laws and rules. The Licensees, in case of any extraordinary event or accidents accompanied by personal radiation injury, must inform immediately the mayor of the concerned municipalities, the County Institute for the National Public Health and Medical Officers Service, the police and the HAEA. If the event goes together with the pollution of the environment, also the regional environmental authority, the Hungarian Meteorology Service and other concerned bodies responsible for the protection of water, food, veterinary, soil etc. must be warned. Also the Licensee is in charge for warning the heads of the central, regional and local organisations of the accident-prevention system.

In case of a nuclear accident with actual emergency, the community of the 30-km area around the power plant is warned by sirens installed in the municipalities. In theory, this people are prepared for such situations. The prepared evacuation plans are available at local and regional organs of the accident-prevention system.

It is the duty of the Government Committee to notify the general population through the national media (radio, television and press).

To prepare the most endangered people for emergency situations (and to inform them about the operation of the NPP), with the participation of 13 municipalities located within 12-km radius of the NPP, the so-called Association for Social Control and Information (TEIT) was established. The NPP provides financial support for the TEIT. This organisation is also alerted in the case of an emergency.

TEIT' at work:

TEIT is supposed to inform the local people about the operation of the NPP with written stuff and with public hearings. Part of their information is a television monitor that is in the window of the two offices, showing the measured values of radiation around the NPP. The members on the TEIT board are the mayors of the cities and villages. Two or three years ago these mayors went to Canada for a 'field trip' ... One of the two information offices (in Paks and in Kalocsa) is headed by the wife of the city notary in Kalocsa. Because of these personal benefits, we have not much trust in this institution:

Moreover, people living in the plants surroundings told us that they don't know what they should do in case of an accident. A man, who is heading a really independent NGO in Kalocsa, (around 15 km from the NPP), in the direction of the wind confirmed our information.

'Well, we cannot say that no one knows the necessary things, but the information on what to do when the sirens ring is not disseminated and the public is not been educated periodically, as it would be necessary.'

The only TEIT information activity last year was an A3-sized paper about TEIT's own activities, sent to everyone's mailbox. Considering TEIT's budget this is not enough.

2 waste management

The Public Agency for Radioactive Waste Management (PURAM)

The Act on Atomic Energy declares (referring to national interest) that all issues related to radioactive wastes, spent nuclear fuel and decommissioning of nuclear facilities shall be the task of an organisation appointed by the Government.

In 1998 the HAEA established (by the authorisation of the Act) for this purpose the Public Agency for Radioactive Waste Management (PURAM). It is a fully state-owned, non-profit Agency with the competence of collection, treatment, transport, storage and disposal of radioactive waste of small-scale producers, and disposal of the radioactive wastes from nuclear power plant. PURAM is also in charge of the operation of the Radioactive Waste Treatment and Disposal Facility at Püspökszilágy.

PURAM's is active in several fields and on different levels.

Planning and reporting:

- cost calculations for determining annual payments into the Central Nuclear Financial Fund (Fund);
- preparing annual plan, and middle- and long-term strategy for the activities financed from the Fund;
- preparing technical and financial reports.

Research, development, implementation:

- preparation and implementation of final LLW/ILW repository;
- extension of interim storage facility;
- preparing HLW disposal.

Operation

- of LLW/ILW repositories;
- of interim storage facility for spent fuel;
- of HLW repository;
- collection and transport of radioactive waste;
- communication and internal co-operation.

Decommissioning:

- operation and guarding phased-out nuclear facilities;
- decommissioning nuclear reactors, power plant;
- site recultivation.

PURAM's head, the Managing Director is appointed by the General Director of the HAEA. The Managing Director directs the three Divisions, namely: Research and Development, Implementation and Ventures, Finance and Administration.

Status and Concept for radioactive waste and spent fuel management

The problem of strategic planning – discussed earlier in the chapter on the HAEA – is closely connected to the issue of nuclear waste. It seems that the question of the LLW/ILW repository at Bataapáti has been decided. However, the problem of SNF and HLW and its depository became more relevant this year, with the changes in Russian legislation, and the INES 3 incident at the Paks NPP, which led to the fuel assemblies being damaged. The question attracted wider publicity than before.

The Russian TVEL won the tender for the cleaning up of the site, and the contract was signed when the Russian Prime Minister visited Hungary. At the same time the Hungarian Minister of Economy announced that a new contract for transporting fresh nuclear fuel from Russia and SNF to Russia could be signed this year.

Hungary's only nuclear power plant, at Paks, has four reactors that generate approx. 38% of the Hungarian electricity production. According to the planned operational time (30 years), the units will be phased out in the period 2012-2017 (there are preparations for the extension of the units' lifetime, but so far nothing has happened officially).

The licensing of decommissioning activities lies with HAEA, but there are no relevant legislative or regulatory requirements in this field.

In 1993 a study on decommissioning was prepared in 1993 (and updated in 1997), in co-operation with the Slovak DECOM company. According to the study there are three basic options:

- complete dismantling of the plant,
- decommissioning of the twin units by safe enclosure,
- store with surveillance the twin units in its original state,

the last one seems to be open for Paks, but further evaluations will be needed.

Besides Paks, Hungary disposes of two research reactors in Budapest. There is no timeline for dismantling these reactors. The costs of their decommissioning will be covered from the state budget, not from the Fund.

Low and intermediate level waste (LLW/ILW)

The first final radioactive waste disposal site was commissioned at Püspökszilágy (around 30 km north of Budapest) in 1976. From the earlier experimental facility at Solymár the waste was transported to the new site.

The Püspökszilágy facility was designed for the disposal of institutional waste. It is a near surface, concrete trench type facility built in claystone. The original disposal area (3450 m³) was extended in 1991 (to 5030 m³). After the extension, the Hungarian Geological Service questioned the suitability of the site, so since then the just temporary licenses are granted at the site.

Since there is no final disposal site for Paks radioactive waste, the NPP transported 1580 m³ of nuclear radwaste to Püspökszilágy until 1989 and again in 1992-96. The transports were suspended between 1989 and 1992 because of public opposition. By May 2003 the free storage capacity decreased to 64 m³. Recently the facility has been making efforts to renew its licence, so reconstruction is underway.

The amount of low and intermediate-level wastes originated from operation and decommissioning of Paks is together approx. 30 000 m³. Since 1993 there has been scientific exploration for the site of the new LLW/ILW repository. Sites for near surface and underground disposal were examined, and by the results of the safety assessments from the view of radiation protection both type proved to be feasible. The fieldwork (with mainly drilling boreholes) and evaluation was completed in 1998, and at the beginning of 1999 some experts questioned whether the performed examinations were comprehensive enough, and also the reliability of the conclusions. The IAEA review in its conclusion looked at the examination process and called it being suitable, rather than the suitability of the actual site.

On the numerous sites that were justified as "preliminary suitable" the locals were asked for their opinion. Only around 10% said yes – that meant 24 sites for further researches. Only on four sites were deeper investigations carried out, and finally the granite rock at the site called Üveghuta, close to the Bátaapáti village was chosen for further investigation, because it is said to be appropriate for an underground repository.

The community of the local municipalities (Bátaapáti and other near villages) was informed about the aspects of depositing of radwaste etc., but everything is designed for keeping up the community's willingness to host the facility in their village.

This year – according to the plans of PURAM – underground research has been started on the site, with a budget of 5237,6 millions of HUF (around 21 millions of Euro). The work and implementation is under time pressure, because after 2006 or 2007 the interim storage site on the premises of the NPP cannot accommodate any waste any more.

High level radioactive waste (HLW) and spent fuel

In Hungary there has been no final decision on the future of spent nuclear fuel (SNF). Between 1989 and 1998, 2331 assemblies of SNF were transported to the Soviet Union and to Russia for reprocessing. The rise in the price and the opposition of the Russian public (because of the worsening environmental situation at the reprocessing plant Mayak) and open questions about the return of reprocessed waste the deliveries were stopped.

In 1995, to solve this problem the construction of a modular vault dry storage system was begun at the NPP's site, and by the end of 1997 the first three modules were being filled. Four more modules were built by the end of 1999, so the capacity of the interim (50 years long) storage facility is enough for 1800 spent fuel assemblies. Further extensions are planned until the end of the plant's originally planned lifetime – 2017 - for all the spent fuel (11067 assemblies estimated).

At the end of 2002 the Russian legislation changed and reintroduced the possibility of importing SNF for the purpose of reprocessing or temporary storage. According to media reports, very soon negotiations started on this issue between Paks and its Russian partner, the TVEL Company. This project is interesting for the Hungarian nuclear lobby, even if it is not more than a temporary solution, because the future of the waste from reprocessing is not clear at all.

From the dismantling of Paks (after 70 years of surveillance after the shut down of the reactors) 3703 m³ high level waste will be arisen as expected. According to the plans, a site with deep geological disposal will be built (designed for the SNF, but planned to be suitable for HLW also). Research was started and after the preliminary investigations the site of the former uranium mine in the Boda Claystone Formation at a depth of 1050 m from the surface was chosen for further examinations. In

1999, after the HAEC negotiations, the Minister of Economy acting as the supervisor of the HAEA rejected the proposal. In the budget for 2001-2002 no funds were earmarked for this purpose. However, the budget of 2003 allocated 498,6 millions of HUF (around 2 millions Euro) for covering costs concerning activities related to a HLW depository. In May 2003 a tender was announced: The preparation of the installation of a research laboratory at a depth of 400 m, at the Boda site.

Waste management and public participation

The Act on Environmental Protection takes socio-political issues and activities with significant impacts on the environment into consideration. The Act declares that before beginning any activities that have significant impact on the environment an environmental impact assessment (EIA) shall be conducted. Together with the request aiming the start of the activity a preliminary environmental assessment should be submitted to the regional environmental authority. This evaluation should detail the aim of the activity, the technical information, and the preliminary estimated impacts on environment and the expected changes in the ecological relations in the environment. The authority may permit or deny the activity or may ask for preparation of a detailed environmental assessment on the basis of the preliminary assessment, but with confirmed details based on local examinations. The authority may withdraw the issued permission.

If the regional environmental authority orders a detailed environmental assessment, a public hearing must be held for citizens of concerned municipalities and other interest groups.

The Act on Atomic Energy declares that all fundamental scientific and technical knowledge and other information – including risks – in connection with the application of atomic energy must be available and disseminated to the public. The licensees of nuclear facilities shall promote the establishment of public associations in order to provide information for the public living in the areas surrounding the facilities. The licensee can offer financial support to these organisations.

During the research to find a possible site for radioactive waste repositories, a public relations campaign was carried out to persuade local people (together with several nation-wide campaigns) of the site's suitability as a disposal facility, essentially in the two main research regions, at Bataapáti and at Boda.

The municipalities in these areas founded their own associations. In the area of Bataapáti the Social Association for Control and Information, abbreviated as TETT, and in the area of Boda the West-Mecsek Information Association, abbreviated as NymTIT. (There is also an association in the area of Püspökszilágy: three municipalities surrounding the Püspökszilágy Waste Treatment and Disposal Facility established the Isotope Information Association). The task of the information offices is to inform the public about radwaste and the technical details of disposal. The mayor of Boda is in favor of the storage, but makes clear, that his community is not going to host the fuel for free: 'to find a site for the final waste storage is in the interest of the nation. But we do not want to be the idiots of the nation...'

TETT and the others at work

The mayors are the members of the associations, or in its decision-making bodies. The associations accept the researches with reservations. Their function is based on dialogue between the partners: the villages and the waste agency (here: PURAM). Their assignments are: keep the public informed about the researches, perform the public control, organise public hearings, organise village-meetings, public sittings of the local government, and organize professional consultations. The Association does not take a stand on technical/professional questions.

The associations do not have even a web page. Only on the web pages of the NPP and PURAM some information is made available.

It is not too hard to imagine with what success they can disseminate the scientific results of the researches for local people. The majority can be characterized as elderly people, agricultural or industrial workers with a fairly low education.

There are no jobs available in the area of these villages, poverty is huge, both of the people and the villages. The TETT (at Bataapati) has a yearly budget approx. at least 45-50 millions of HUF (200 000 €), which is quite the same than one villages own budget! Last year the State Auditor examined PURAM's activities, including those support activities for these associations, which are funded from PURAM's annual budget. The Auditor called the HAEA, the manager of the sources for better and more accurate accounting, or rather called for justification, whether the funds are really used for the required purposes or not.

In the case of both PURAM and Paks NPP there is an insufficient level of transparency. The well-known justification that nuclear and related sciences are out of reach of laypersons is true, but not only this information needs to be made public: the reports, statements, campaigns, and published information have been mainly one-sided. A discussion about risks and other controversial information is minimal or does not exist at all.

It has to be said, however, that in Hungary a lack of transparency is not an exclusive feature of nuclear related activities, but in general a problem of the Hungarian administration.

Information policy needs to be developed to increase the level of transparency. Decision-makers should begin to view civilians and civil organisations as competent partners and this should result in balanced information. Data sources should be accessible and civil organisations need to be involved in the decision-making process, transparency and accountability leading to a situation where sound, objective decisions can be taken.

The Central Nuclear Financial Fund

For the purpose of covering the costs of nuclear waste management and decommissioning of nuclear facilities a separate state fund, the Central Nuclear Financial Fund (Fund) was established in 1998 (before that, no such fund existed). The Fund can be used only for financing the construction and operation of facilities for the final disposal of radioactive waste (including both interim storage and final disposal of spent fuel), and the decommissioning of nuclear facilities, and for related expenses. The HAEA-supervising member of the Government (previously the minister of economy, now the minister of internal affairs) is responsible for the operation of the Fund, and the HAEA is the manager of the Fund.

The waste producers are liable for paying all expenses connected with these tasks. Payments of licensees of nuclear facilities are determined in such a way that the Fund should cover all costs of waste management. The electricity price has to include a contribution into the account. To ensure the stability of the value of the Fund a certain funding is provided from the state budget (depending on the base of real rate of return).

PURAM has to prepare proposals for long and intermediate plans and year plans as well. These are evaluated by a special Expert Committee set up by the minister supervising the Fund with the presidency of the Director General of HAEA.

The plans are to be approved by the Minister supervising the HAEA who submits the plan for approval in the yearly budgetary law.

On the basis of the middle- and long-term plans, PURAM prepares annual plans for projects, which has fulfilled and financed from the Fund, and calculates the amount of the necessary payments.

The way the Fund is financed needs to be reconsidered. It must be ensured that shortages can be avoided in the future, especially as this is not guaranteed by recent practice. The mentioned problems should be taken into account, at least in respect of the incalculable effects, especially the issue of the problems related to the political situation: just two years after collection started, the first problem in this aspect occurred. A clear strategy is also necessary in the case of SNF, otherwise the planned balance of payments and expenses may be endangered.

References:

1) Acts

- Act on Atomic Energy, No. CXVI/1996
- Act on Environmental Protection, No. LIII/1995
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- Act on Electric Energy, No. CX/2001
- Act on Public Finance, No. XXXVIII/1992

2) Government Decisions

- on the Hungarian Atomic Energy Authority and Atomic Energy Co-ordinating Council, No. 114/2003
- on the Nationwide Nuclear Accident Prevention System, No. 248/1997
- on the Establishment of PURAM, No. 240/1997.

3) Studies

- Summary of the First National Report prepared in the framework of the Joint Convention on the Safety Spent Fuel Management and on the Safety of radioactive Waste Management concerning the Waste Management Agency, 2001.
- Summary of the Second national Report Prepared in the framework of the Convention on Nuclear Energy concerning the Nuclear Safety Authority, 2000.
- The first, the second and the third middle- and long-term plan of PURAM on the activities financed from the Central Nuclear Financial Fund, 1999, 2002, 2003.
- The Energy Clubs own study on the financial aspects of the two plans of PURAM, 2003.

4) WEB pages

- www.oah.hu (HAEA)
- www.rhk.hu (PURAM)

NUCLEAR RISK AND PUBLIC CONTROL - nuclear safety and waste management

A joint project of Central European NGOs

Part II

National Report on Slovakia

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Za Matku Zem, 2003



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1 The Nuclear Regulatory Body

The Atomic Law

According to section 20 of law 130/1998 the responsible body for nuclear safety is the operator of the nuclear facility (NF), i. e. the utility Slovak Power Stations (Slovenske Elektrárne).

The Ministry of Economy is the central department of state administration responsible for nuclear energy, including the management of nuclear waste and radioactive waste storage, permitting the import and export of special materials and equipment.

The Ministry of Health of SR controls the radiation protection of the employees working in the nuclear facility and is responsible for the control of radiation protection of the inhabitants in its surroundings.

The Ministry of the Environment manages through the Slovak Hydrometeorological Department the early warning monitoring network, i.e. 23 stations for dose rate measurement, which serve as a database for organizing the emergency response in case of a nuclear accident.

The Ministry of Interior Affairs of SR is responsible for civil protection. In case of a nuclear accident it is responsible for organizing the first aid to the public (law on civil protection no. 42/1994).

The Regulatory Agency (ÚJD)

The central department of state administration in the field of nuclear safety is the Nuclear Regulatory Agency of the Slovak Republic (ÚJD). ÚJD is an independent state regulatory authority reporting directly to the Government, headed by the ÚJD's Chairman, who is appointed by the Government. ÚJD's budget is part of the state budget. Financial and human resources are at the disposal of ÚJD, which can be used for the independent safety analyses and technical support. In January 2003 ÚJD had 82 employees.

As the state regulator in the field of safety of nuclear installations ÚJD in particular:

- performs inspections of workplaces, places of operation and premises of nuclear facilities,
- verifies the compliance with the commitments under international agreements and treaties
- identifies the status, reasons and consequences of accidents, incidents and selected failures
- checks the performance of mandatory inspections, reviews, operating controls and tests of selected equipment in nuclear facilities,
- checks the contents and exercise of emergency plans.

ÚJD edits annual reports on the outcomes of regulatory activities and on nuclear safety. The annual summary reports are submitted to the Slovak Government.

The chairman nominates the deputy chairman and other members of the ÚJD board.

We consider involvement and some supervision from the side of non-governmental organizations in the name of the public as crucial. We think that the experts in the managing and operational team of ÚJD do not have to be supportive of the operation of nuclear power plants (NPP)- on the contrary: critical experts can contribute very much to improve the safety of nuclear facilities.

But in reality the opposite is true: many times employees in state energy sector were fired or transferred to other jobs, because their attitude to nuclear energy was not positive enough, or somebody was communicating too much with NGOs.

ÚJD checks nuclear equipment on site, performs inspections of the plants, and reviews the documentation.

Inspections are planned for one calendar year in advance and cover all areas necessary for nuclear safety. In the year 2002 110 inspections took place and for the year 2003 there are 117 inspections planned. If necessary, ÚJD performs also extra inspections. (Data on the web page of ÚJD – [www.ujd.gov.sk]).

Control of nuclear safety is fulfilled with permanent presence of inspectors in regular work time on the localities Jaslovské Bohunice and Mochovce. ÚJD makes the controls based on the documentation which the operator is due to send for approbation, ÚJD submits the government an annual report of the done work and an evaluation of nuclear safety.

License-holders need an approval of ÚJD, and ÚJD has to control their performance regularly. If they don't fulfill all regulations, ÚJD can settle corrective arrangements or penalty. [Letter from ÚJD]

Here needs to be mentioned, that the law 71/1967 about the administrative procedure is from the time of deep communism, it is old and needs a revision.

From our point of view ÚJD should have the right to give sanctions and penalties and binding authorities in cases of :

- Violation of laws and norms by the nuclear operator and the 'nuclear' firms;
- threat to nuclear plant safety;
- threat to public health and environment by the nuclear operator.

It must be possible for the nuclear regulatory body or for the government to shut down nuclear reactors in cases of high radioactive releases into the environment, accidents or violation of safety standards.

ÚJD and the public

The operator of the plants, SE, is obliged to inform the public about any failure of technological equipment in a nuclear power plant, which has impact on operation or on the environment. In this case the operator informs the mass media.

Accidents, which can lead to a leakage of radioactive materials into the environment, cause the activation of accident response organization. In this system included are accident commissions of SE facilities but also accident commissions of districts, regions, ÚJD and the commission of Slovak government for radiation accidents. This emergency response staff sets protection measures based on the prepared emergency plans for protection of the people living & working around the NPP.

'SE and its facilities are in this case oriented on arrangements (=accident management), which lead to the elimination (=minimization) of impacts to environment and especially to ensure technological conditions of the reactor so that a further development of the incident is stopped and all barriers to retain the radioactive materials are intact....

All steps to protect inhabitants around NPP are carried out by organizations of accident response on the level of state administration and self-government i.e. districts, region departments and by civil protection organizations based on information given by the facilities (SE-EBO, SE-EMO, SE-VYZ) and other cooperating organizations for different levels of accident response organization....

Arrangements for public protection are prepared by the 'Operational management group' established as advisory body of Government Commission for Radiation Accident based on information given by the operator and based on monitoring of the radiation situation of NPP surroundings. ÚJD informs the public according to the section 31 (h) of the law 130/1998 and law 211/2000: on important facts for nuclear safety. The spokesperson distributes this to the media.' [Letter from SE]

The inspection plan and the annual reports are published on the ÚJD web page. [www.ujd.gov.sk]

The information ÚJD gives to the public is only partly sufficient. Considering the importance of nuclear energy for health and environment, public information is a very important task of ÚJD.

The information on the web page of ÚJD is difficult to understand for laypersons. On the other hand it does not contain enough information for the educated public and for experts. Statements like 'There was set up a task with several aims.' and 'The aim was, or was just partly fulfilled.' are not helpful.

From our point of view the web page should contain:

- Concrete information with detailed descriptions of the safety controls for expert public.
- Explanations in a language understandable to the wider public.
- Studies and works made in context of repairs, measurements and controls of nuclear plants in Slovakia.
- Statements of independent experts, which are not employed by ÚJD.

Many times we have the feeling that ÚJD exceeds his competence and in many cases ÚJD presents the nuclear energy as a positive solution for future energy demand, which definitely not a task of an independent nuclear safety authority. ÚJD should act much more as an independent body for nuclear safety control in nuclear power plants and making sure safety standards are not being neglected.

Independent information is of high significance, since Slovak Power Plants (SE) has an Department for Public Communication and the nuclear power plants present their view in regular communication to the public about the operation of NPPs. Requested specific information is sent to public unless it is classified as state or business secret.

The SE web page contains only scarce and simple public information. For example SE presents information about renewable energy; however, it includes tendentious remarks that this sources are of no interest for the energy supply, neither short term nor long term.

´ Within the frame of comment procedure for the important materials on the web site of ÚJD, or where the generally mandatory statutes gives public the possibility to take part in the decision making process (laws 71/1967, 127/1994, 211/2000). Especially the building law in hearings according to this law and the law 127/1994 sets up possibilities. ´ [Letter from ÚJD]

Besides that public and especially NGOs should have a real possibility to be involved in the decision process of ÚJD and SE - till SE is a state owned company). ÚJD should produce binding regulations based on the public opinion (of course till it is not about commenting of technical materials)

It is also important to set up rules, when and how the public will be involved in ÚJD (and SE) decisions taking, especially in case of the construction of new nuclear facilities for handling and deposition of nuclear waste. The Laws 71/1967, 127/1994 and 211/2000 are not acceptable under this point of view, because they limit public participation to existing projects and exclude the public from the planning process.

We, from Za Matku Zem can say based on our own experience, that the information provided by SE is very limited. SE publishes only what it wants to be distributed. We received negative answers on questions like:

- Please give us the study on the reconstruction of the reactor units in Jaslovske Bohunice V1 and the financial details.
- How much does the NPP Mochovce cost? Please also give the financial details of the construction?
- Please give us the studies concerning the back end of the fuel cycle.
- Which localities are you considering for high-level radioactive waste storage?

2 Waste Management

The responsibility for radioactive waste management

There is no special agency in the Slovak Republic dealing with nuclear waste management.

According to act no. 130/1998 Coll., article 17, section. 6 on the safe handling of radioactive waste (RAW) the generator of the RAW is responsible for RAW from its creation up to its transport to a RAW disposal site, unless stated otherwise by ÚJD. (1)

Slovak Power Plants are responsible for the handling of RAW from nuclear power plants. The safety of handling radioactive waste is under ÚJD oversight. (3)

Nuclear Regulatory of the Slovak Republic (ÚJD) acts, by-laws and resolutions of the Government that apply in connection with the handling and disposal of radioactive waste [Government of the Slovak Republic no. 190/94, no. 5/ 2001, no. 684/ 1997, no. 930/ 1992].

According to the effective 'legislation' of the Slovak Republic, the operator is obliged to inform ÚJD on the handling of RAW half yearly, which it does. (3)

Status and concept for radioactive waste and spent fuel management

The Slovak national report to the Nuclear Waste Convention describes the status of radioactive waste management as follows:

The current basic concept of spent fuel at SE and in the Slovak Republic can be characterized as follows:

- The nuclear reactors in Slovakia operate under an open fuel cycle concept.
- The export of spent fuel abroad and the re-import of a transport of reprocessed products (Pu, U, HAW) is not being considered.
- Short-term storage of spent fuel (3 to 7 years after it has been removed from the reactor core) is assured in the pools located at the reactors (SFP) installed at each reactor unit.
- Long-term storage of spent fuel (40 to 50 years after its removal from the reactor) is secured by separate storage facility at Bohunice.
- A long-term goal within the concept of spent fuel management is a construction of deep geological repository of SF and HRAW in the Slovak Republic.
- To verify the possibility of transporting the spent fuel into foreign countries for final disposal or reprocessing without importing the products back into Slovakia.
- In future, to verify the possibility of international or regional solution on the final spent fuel disposal.

Long-term spent fuel storage (40 to 50 years after its removal from the reactor), which is required before conditioning and putting the spent fuel into a repository, will be carried out in separate spent fuel storage facilities at Jaslovské Bohunice and Mochovce.

A project of spent fuel storage facility at Mochovce is currently in first stage of investment implementation.

There is a correspondence between SE and several organizations in the Russian Federation in order to verify the possibility of transporting the spent fuel for reprocessing into the Russian Federation without returning the resulted products back into the Slovak Republic. The Russian side indicated proposal for such transportation already.

Development of a deep geological repository (DGR) for permanent disposal of SF and high-level RAW started to be dealt with systematically step-by-step in 1996. Two stages of DGR development were completed in the period of 1996 - 2001. The following tasks were dealt with during the completed stages:

- Design and implementation activities
- Source term, near and far interactions
- Site selection
- Safety analyses,
- Public involvement.

There were 5 candidate sites selected, where the basic field research was performed. In addition to that, partial reports summarized international experience in the deep geological repository development, directions and plans in all areas were set, expert teams for solution of individual issues was established, and co-operation started with organizations from other countries (BE, CHI, CZ, UH) dealing with deep geological was established.

It is suggested to continue in the DGR development with the following three tasks in the period of 2003 through 2007:

- Site selection,
- Demonstration of DGR safety,
- Technical and organizational activities and co-ordination.

The purpose of this stage shall be a reduction of the number of study sites, and to shift from the level of study sites to prospective sites.

Results of works to be done in 2008 through 2012 (2015) shall demonstrate all necessary conditions of the DGR preparation and implementation. The most important aspect of the above is the DGR location, including its public acceptance. The next stages of the DGR development shall then be the following:

- preparatory stage, resulting in the construction approval,
- implementation stage, resulting in DGR operation.

The radioactive waste management policy currently can be characterized as follows:

- Effectively use the current equipment for radioactive waste treatment and conditioning installed at Jaslovske Bohunice site.
- Basic solidification methods to put RAW into a form suitable for final disposal.
- Long-lived storage of radioactive waste is allowed only in specially adapted areas approved by the regulatory authorities. The radioactive waste, which is dedicated for long-lived storage, shall be disposed in solid form and in suitable containers.
- The radioactive waste which does not meet the criteria for disposal in near surface repository shall be disposed of in deep geological repository, a deep geological repository shall be built.

The costs of radioactive waste management produced during the decommissioning of nuclear power facilities shall be covered from the resources of the Fund. The costs of radioactive waste management produced during the operation of nuclear power plants shall be covered by the operational costs of these power plants. [National Report 2003]

According to Act no. 130/1998 Coll., Article 17 section no. 11: `all activities during handling of radioactive waste must aim for its safe storage` for highly radioactive waste this is according to the Concept for handling of radioactive waste approved by law no. 190/1994 an underground disposal site. [Letter from UJD]

All RAW that on the basis of approved limits cannot be stored at the disposal site in Mochovce will be stored in underground disposal sites. It will be stored under surveillance until the construction of the underground disposal site is finished.

Owing to the concept of handling of RAW focused on its treatment and storage following the shutdown of the NPP agreed upon during the construction of the NPP, RAW became accumulated in storage facilities.

Towards the end of 2002, app. 7630 m³ of liquid RAW (concentrated) was stored in NPP tanks at the NPPs in Slovakia, and 3280 m³ of solid RAW was stored in the NPP storage (low and medium active RAW). [Letter from SE].

2500 t of heavy metal are stored in pools at the NPPs. An intermediate storage exists at Mochovce NPP.

Jaslovske Bohunice (EBO) NPP A1, which was destroyed by an accident in 1979, is now being decommissioned. Approx. 860 m³ of liquid RAW, 1150 m³ non-metallic RAW, 1093 t metallic RAW and 300 m³ metallic RAW in barrel, 4063 m³ contaminated soil and rubble and 500 m³ of solid waste products from liquid RAW line (cementation, bituminisation) are stored at the end of 2002 [Letter from SE]

Slovak Power Plants is not planning any highly active RAW transports across Slovak territory within the next five years [Letter from SE]

The accident at Bohunice A-1 NPP:

In the summer of 1955, an offer was made by the former Soviet Union to the Czechoslovak Republic to provide support during the research and development of a nuclear power plant construction. From the beginning, the Czechoslovak/Slovak nuclear power program has been very strongly controlled by the USSR. In May 1957, the new NPP A-1 was established, with 1 experimental reactor KS 140 with a 150 MWe capacity (heavy-water with natural uranium fuel). First, it was based in Bratislava, the Slovak capital, then in Jaslovske Bohunice on a plain not far from Bratislava (about 70 km) that proved to be the most suitable location for the power plant construction and operation. The construction started in August 1958. The reactor was put into operation on 24th October 1972.

The nuclear power plant A-1 was presented as one of the most progressive and also the most powerful type of power plants (related to its output) built in the countries of the Council for Mutual Economical Assistance. The euphoria at the planning and start of this NPP was gradually replaced by dismay due to the number of technological defects and incidents, which from the very beginning accompanied its service during the 5 years of its operation. The first serious accident - the firing/discharging of a fuel element - took place on 5th January 1976 causing the death of two workers. On 22nd February 1976, another accident happened - the melting of fuel elements. Finally in 1977, the reactor was definitely put out of the service. The last serious accident took place in 1991 when a considerable amount of radioactivity (the biggest in the Slovak history) contaminated the reactor hall during the extraction of destroyed fuel elements.

The decommissioning of the A-1 plant and the disposal of the impacts of these accidents are to be terminated in 2050. The 1st stage of preparations for decontamination started in 1994 and should finish in 2007 despite the fact that assessment of the environmental impact of the decontamination project, and the public participation process according to the national legislation, is only being carried out as of lately. [Bartovicova 1999]

Plans for finding a final repository for Spent Fuel

By course of Act no. 130/1998 Coll. article 17, section 11 'all activities during the handling of radioactive waste must aim at its safe disposal', which in the case of highly radioactive waste is its safe disposal in underground disposal sites. [Letter from UJD]

Slovak Power Plants plan to store the highly active RAW in underground disposal sites. According to the plans of underground disposal site development, a service term of 2037 to 2095 is under consideration. Cost for the service of the underground disposal site is estimated at 470 million EURO.

The central part of Tribec Mountains, the southern part of Vepor Mountains, the southwestern part of Stolicke Mountains, the eastern part of Cerova Highlands, the western part of Rimavská Valley are considered as appropriate for a deep underground repository for spent fuel (SF) and high level radioactive waste (HLW) [Letter from SE]. Slovak Power Plants was not willing to specify the locations that are already under research.

Basic field research has been undertaken in the mentioned locations, and the inevitably long-term monitoring of the locations in a limited scale (vertical movement tendencies) has been commenced. [Letter from SE].

The mentioned answers of Slovak Power Plants did not include any timetable concerning decision making on the locations of the disposal site, public commentary from the social and environmental aspects viewpoint, the beginning and the termination of construction of the disposal site.

We consider the costs for the service of the disposal site as markedly under-estimated and, according to our opinion, not based on reliable economic analysis.

Waste management & public participation

ÚJD informs the public through web pages at www.ujd.gov.sk and provides the public with an annual report. [Letter from SE].

As was mentioned before the ÚJD even in this case gives the public only basic information concerning the disposal sites of HLW and does not carry out anything similar to public participation. The National Report of the Slovak Republic processed according to the 'Nuclear Waste Convention' is also available. [Letter from SE].

SE does not involve the public in the search for geologically appropriate locations. SE did not inform the people at the beginning about these research activities.

The result of the work is a study – 'Assessment of the Surveyed Locations' that will be followed up by further research. In 2001, SE published a comprehensive publication for the public entitled 'Underground geological disposal sites for spent nuclear fuel and HLW'. [Letter from SE].

The general publication issued by SE is nothing but a brief overview not giving much concrete information. That proves the weak effort of SE to give objective and truthful information. We cannot resist the feeling that SE and the Ministry of Economy of SR have no interest to include the public from the very beginning in the process of selection and preparation of an underground disposal site for HLW.

ÚJD is monitoring the development of the work on the project of underground disposal sites and is also invited to make various objections to the project. ÚJD will issue by course of act no. SR 130/1998 Coll. Article 14 decisions for the evaluation of the submitted documentation according to section respectively section 3 of this clause. [Letter from ÚJD].

Information on the preparation of the process of 'disposal' of HLW for section bodies were not submitted individually, but within the frame of multiple information back part of the nuclear fuel cycle. The last such document was the 'National Report of the Slovak Republic' processed in accordance with the 'Nuclear Waste Convention', submitted to the International Atomic Energy Agency (IAEA) in 2003. [Letter from SE].

The current stage is characterized mainly by purely scientific research and development work. So far, none of the researched locations has been proven to be utterly suitable, not even was the concept of handling of depleted nuclear fuel and highly active RAW through storage in underground disposal site confirmed and approved by state bodies. There is therefore no reason at the present for the public to intervene in the selection process of an underground disposal site. Slovak Power Plants, Ltd. published for the public a general publication concerning this subject in 2001 titled 'Underground Geological Disposal Site for Depleted Nuclear Fuel and Highly Active Waste'. [Letter from SE].

At the moment, the public has no access to any of the 'purely scientific research and development papers' which we consider to be a grave mistake and a violation of the Act on access to information. The public too, at least through the medium of non-governmental organizations, has the right to details of such significant planning and documentation such as a highly active RAW disposal site. Again, any conception of public participation whatsoever is lost. It would be a misfortune if the public had the chance to judge only the completed project under the Act on evaluation of impacts on the environment, but could not participate already during the preparations of the project.

SE thinks that since HLW is not disposed of at the moment in the Slovak Republic there is no need to inform the people on matters of highly active RAW. It seems that SE has decided not to involve the public in the development of their waste management plan.

Arguments of the power plant are absurd because highly active RAW is already present in Slovakia, and it is necessary to do something with this most dangerous waste humankind has ever produced. To assert that unless 'disposal' of highly active RAW is not resorted to then there is no need to inform the public is an example of the undemocratic functioning of Slovak Power Plants.

Slovak Power Plants submit a yearly report 'The condition of work on the decommissioning of the reactor A-1 during the last year' on the process of decommissioning of A-1. Until 1999, the government of the Slovak Republic debated the report. As of 1999, the report is debated under decision of the government under the guidance of ME SR with the participation of representatives of the Ministry of the Environment of the Slovak Republic and the NR SR of the Slovak Republic. [Letter from SE].

The public takes part in standard commenting actions in accordance to the relevant legislation. [Letter from ÚJD]. All projects concerning the handling of RAW are taken into consideration under Act no. 127/1994 on the evaluation of impacts on the environment with the participation of the public. [Letter from SE].

This is just where we see the stumbling block in connection with public participation. The elusive answers of NR SR and SE suggest their lack of interest in the participation of the public during selection of the disposal site. Act no. 127/1994 on the evaluation of impacts on the environment (EIA of a certain project on the site) with participation of the public allows the public to criticize an already completed project and in practice means further enforcement of citizens to accept completed projects.

A similar example was the EIA process of completion of the first units in the EMO NPP where the public strongly criticized the project of termination of the building. Even in spite of that, the observations were not processed nor accepted in any way. SE crossed off the obligation of a process of public participation, but in reality it was a farce.

Za Matku Zem will use all legal means to help affected communities in the regions under consideration for the construction of the disposal site (central part of Tribec Mountains, southern part of Veporske Mountains, southwestern part of Stolicke Mountains, eastern part of Cerova Mountains, western part of Rimavska Valley) to obtain the 'right to veto' possible decisions of Slovak Power Plants and the Ministry of Economy of the Slovak Republic.

Financing of the future Storage and Decommissioning

The costs of the storage of low and medium active RAW at the Mochovce storage site are estimated at 11 000 to 12 600 EUR/m³ of liquid RAW (concentrate) and 14 630 to 22 000 EUR/ton (not including VAT) of solid RAW (compressed, and metallic) [Letter from SE].

The EIA documentation of the A1 decommissioning with several hundred pages contains only six (!) lines on economic costs, anticipating 115 million EUR for the 1st stage. In contrast, the draft of Energy Policy anticipates almost 146 million EUR. According to data of the Slovak MPs' research from 1997-8, the A-1 decommissioning should cost 1 billion Euro [Bartovicova 1999]. The subsidy from the state budget for the disposal of A-1 exceeded 16,4 million EUR in 1995-1999; over 33,4 million EUR was spent from resources of the State Fund for the disposal of nuclear power units and handling of depleted nuclear fuel and radioactive waste.

The current estimates of the total costs are around 1,46 billion EUR on the assumption that of the spent nuclear fuel (2500 t heavy metal) and highly radioactive waste (3150 m³) will be stored. For the very construction, 492.0 million EUR is estimated. This amount may change according to the amount of stored spent nuclear fuel and highly radioactive waste. According to the present legislation, financial sources for the construction of underground disposal sites are being accumulated in the State Fund for the disposal of nuclear power units. [Letter from SE].

We consider the estimate of the SE as purposefully underestimated and we will demand the public release of financial analyses, as well as of the detailed geological works in connection to the disposal sites.

Our estimates for the construction of disposal sites exceed 1,22 billion EUR, and service costs are in essence incalculable because it is necessary to consider the control over and management of the disposal sites for several hundred thousand years.

The 'disposal' (handling, treatment and storage) of all RAW originating during the service of nuclear units is financed by non-investment (service) resources of the Slovak Power Plants. The State Fund for the disposal of nuclear power units finances the 'disposal' of RAW originating during shutdowns of nuclear units and handling of depleted nuclear fuel and radioactive waste that is created by contributions of nuclear power plants according to the amount of electricity they produce. [Letter from SE].

According to the budget submitted in the report, over 1,25 billion EUR be gathered in the fund by 2035. The expected expenses of the fund connected with its activities are estimated though at over 2,6 billion EUR. [Krivosik 1999]

This fact only proves that the fund will not be able to secure sufficient financial resources for the disposal of RAW, and the state will again have to 'cover up the holes' of atomic power using the state budget, using tax payers' money.

This question should be aimed at the Ministry of Economy of the Slovak Republic. The State Fund is a government organization controlled by state control bodies. According to Act no. 254/1994 unabridged, the Ministry of Economy carries out the State Fund report. Slovak Power Plants may control the management of the State Fund by means of their representatives in the Fund's Board that is named by the Minister of Economy, as it is the counseling body in accordance with the law. [Letter from SE].

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ANNEX - Energy sector in Slovakia

Development of the energy sector in Slovakia differs from the situation in Hungary and the Czech Republic. Liberalisation is far behind the other countries, the operator of all Slovak power plants, Slovenske Elektrarne (SE), is still a state-owned company. Sometimes we have the impression, that SE commands the Slovak policy, instead in reverse, the political institutions deciding about the energy policy.

The last ten years brought many changes to the energy sector in Slovakia. One challenge was the reform of monopoly electric producer, Slovenske Elektrarne (Slovak Electric Utility).

As a negative 'development' in the energy sector we, Za Matku Zem (For Mother Earth Slovakia), regard the start-up of the first two units of nuclear power plant (NPP) Mochovce. The construction of this NPP cost 1,5 milliard EUR and it brought important density of the state budget in form of redemption the loans. The power plant was finished and put in operation in spite of the protests of NGOs, the public and other objections: two resolutions of European Parliament stated the financial disadvantage of this project, further criticism contained the documentation of manipulations, withdrawal of firms from the project and of European Bank for Reconstruction and Development from supporting the power plant financially. (In the present there are two reactors of the type VVER 440/V 213 in operation.

Even if it came very late, the decision of Slovak government to shut down the first two units of NPP Jaslovske Bohunice in the years 2006 and 2008, respectively, has to be regarded as a step in the right direction. The NGOs wanted to end of the operation of Bohunice V1 in year 2000, as it was primarily planed. European Union (EU) prohibits the operation of high-risk reactors like VVER 440/V 230 in the member states; in spite of expensive reconstruction of the first unit (which didn't led to provable higher safety). The second part of Jaslovske Bohunice with two other units VVER 440/V 213, presents less risk from the safety point of view. It is scheduled for closure around the year 2015. Nuclear power plants produce 53% of the annual energy demand.

As a success in the reform of power generation can be figured the approbation of Slovak Energy Policy in the year 1999. NGOs were involved in the working process and supplied to the form and content of the policy. Future laws and documents for the energy policy should be based on this Energy Policy.

In the field of coal heated power plants the past had led to changes especially in the range of decreasing the emissions of SO_x, NO_x and cinder fractions with installing the filters and improving the quality of operation. There are four coal heated units in operation coal: two in Novaky (ENO A and B) and two in Vojany (EVO 1 and EVO 2). These thermal power plants unlike the nuclear power plants are included into the privatization of producing sector. The privatization of Jaslovske Bohunice NPP is not planed and the privatization of Mochovce NPP is not interesting for none of the eight offers, what just shows the risks of nuclear energy. Coal power plants produce 21% of the Slovak energy demand.

Hydro power plants produce 17% (5 096 GWh) of energy demand in our country. Za Matku Zem regards the maintenance and increase of their electricity output as addition in the progressive switch to renewable energy sources (RES). Slovak NGOs object the building of new dams (Slatinka, Tichy Potok etc.) because they are a great devastation of the environment and they are expensive, too.

The hydropower plant Gabcikovo also is exempt from the privatization of the energy sector. Most environmental NGOs see its operation start in the nineties as a step backwards in the energy field. Financial machinations, which culminate in the year 2002 with complaint because of fictitious invoices for a sum of 15,00 million EUR, just manifest the high level of corruption in state joint-stock companies.

Regarding the use of renewable energy sources, Slovakia still tails away the EU. The contribution of classic RES at energy production is on the level of 1% (not counting the big water dams). The state support for RES is basically on the zero rank. Program for supporting of RES exists from the year 2001, but it is not enough propagated, financially restricted a full of useless bureaucracy.

The draft of the Law about the energy efficiency is momentary for the third time in annotating procedure. So with other words – there exists no direct and indirect state support for the programs of efficient use of energy and energy savings.

In the actual transformation of the energy sector, the distribution companies (ZSE, SSE and VSE) have been privatized and momentary there is the selection process for privatization of 49% of Slovak Electrical Energy (Slovenske Elektranre) stocks. Za Matku Zem sees a possibility of change in the energy management due to the privatization process, because state guaranties will not exist anymore as well as state support for megalomania projects, which represent big problems for the environment and for the state budget in Slovakia.

On the other hand Za Matku Zem sees the danger of huge political influence and corruption in regional monopolies, which buy in the whole world economic lucrative generation and distribution units. But anyway we hope that an opened energy market will allow entrepreneurs effective investments into RES and will allow the public the selection of energy suppliers and producers.

Present post-communist development shows:

1. Progressive decrease in nuclear energy use. The last nuclear reactor can end its operation around the year 2030.
2. Development of gas power plants in an open energy market.
3. Progressive decrease of coal power plants. We expect the real end of the coal power plants operation to occur around the year 2050.
4. Maintenance and continuation of the use of the big water dams for energy generation.
5. Progressive development of RES especially biomass, solar energy, geothermal energy, and small hydro power plants and in minor volume the use of wind-power. Under Slovak conditions it is realistic to achieve something around 50% energy generation by RES.
6. Progressive decrease of energy demand in the industry and consumer sector is a realistic scenario: 20 – 25% in the next ten years

The level of corruption in the state energy sector shows the importance of public control and that not just through the control of Bureau for Regulation in Power Departments.

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