

**Plan of activities and budget
of the Radioactive Waste Repository Authority
for 2007 and three-year and long-term plans**

October 2006

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1. Introduction

1.1. Mission and principles of the Radioactive Waste Repository Authority

The Radioactive Waste Repository Authority (RAWRA) is a state authority established according to §26 of Act No. 18/1997 Coll., on the peaceful utilisation of nuclear energy and ionizing radiation (Atomic Act) as amended. RAWRA's mission is to provide for the safe disposal of present and future radioactive waste in compliance with requirements pertaining to nuclear safety and the protection of the general public and the environment¹.

Annual, three-year and long-term plans are submitted for approval to the Government via the Ministry of Industry and Trade in compliance with the provisions of §30 section 1, a) and b) of the Atomic Act. RAWRA's Supervisory Board (the Board) recommends the minister to submit the aforementioned plans to the Government according to §29 section 5, b) of the Atomic Act.

RAWRA's activities are supervised by the Board, the members of which are nominated by the Ministries of Industry and Trade, Finance and Environment, the principal generators of radioactive waste, the municipalities in which repositories are located as well as by the general public. By virtue of its various decisions and recommendations, the Board takes an active part in the day to day management of the Authority.

RAWRA is funded from the so-called nuclear account which consists of compulsory contributions from radioactive waste generators and is administered by the state.

1.2. Current situation in the field of radioactive waste (RW) disposal

By far the greater part of the total volume of radioactive waste consists of short-lived low-level waste (LLW) and intermediate-level waste (ILW) which are produced in both liquid and solid form during the operation and decommissioning of nuclear reactors and as a result of the various uses of ionizing radiation sources. Such RW ceases to be radioactive within a period of a few hundred years and can therefore be disposed of in near-surface repositories. The technology for the processing and treatment of such waste prior to disposal is known at the international level and is applied to waste produced in the Czech Republic.

LLW from the nuclear power industry is disposed of in a surface repository located at the Dukovany NPP. The total storage volume amounts to 55 000 m³ (approximately 180 000 barrels) and is large enough for the storage of the combined waste from both the Dukovany and Temelín NPPs even in the event that the operation of those plants were extended to 40 years provided that the waste meets the relevant acceptance criteria.

LLW generated by industry, research and medicine is disposed of at the Richard (near Litoměřice) and Bratrství (near Jáchymov) repositories. The Dukovany repository could also be utilized for such waste should it be required.

The Richard repository is located in the former limestone mine known as Richard II (under the Bídnice hill). Institutional waste has been disposed of at this site since 1964. The total volume of the underground chambers exceeds 17 000 m³, the waste disposal capacity making up roughly half this volume (the remaining space is taken up by service corridors). Based on knowledge obtained by hydrogeological, geo-engineering, geotechnical and seismic

¹ §25 of Act No. 18/1997 Coll.: Under the conditions stipulated by this Act the state vouches for the safe disposal of all radioactive waste, including the monitoring and inspection of repositories after their closure.

monitoring, construction expert opinions, and the present condition of the waste packages RAWRA is confident that in the long term all the various requirements concerning radiation protection and nuclear safety have been fulfilled in their entirety.

The Bratrství repository is devoted exclusively to the disposal of waste containing natural radionuclides. Reconstruction of the haulage tunnel of this former uranium mine provided 5 chambers, with a total volume of approximately 1 200 m³, suitable for disposal. The repository, put into operation in 1974, is situated in wet crystalline rock which required the construction of an efficient drainage system. Water leaving the repository is constantly monitored and safety analyses to date have consistently confirmed the long-term safety of the repository.

RAWRA is responsible for the operation and monitoring of all the Czech Republic's repositories, including the now closed Hostim repository, in compliance with respective SÚJB (State Office for Nuclear Safety) permits and mining permits where relevant. At the present accumulation rate of RW repository capacity is sufficient for the next several decades. The building of new repositories is not foreseen, rather the capacity of existing repositories will be maximized and the Richard repository extended if deemed necessary.

A limited amount of LLW and ILW is produced which is not acceptable for disposal in near-surface repositories. Such waste is presently stored either by the generator or by RAWRA and it is planned that it will be finally disposed of in a deep geological repository (DGR). Similarly, high-level waste (HLW) and spent nuclear fuel (SNF) after it has been declared to be waste cannot be stored in existing repositories and it is assumed that such waste will finally be disposed of in a DGR. Prior to the commissioning of a DGR such waste is stored by the generator. The Concept of Radioactive Waste and Spent Nuclear Fuel Management in the Czech Republic (the Concept) requires that two candidate sites for the construction of a DGR be included in regional development plans by 2015. After a thorough assessment of the whole of the Czech Republic, 6 localities have been selected and preliminarily characterization studies conducted. However, at all 6 localities public opinion is opposed to DGR construction and consequently geological exploration at these sites has been suspended until at least 2009. Nevertheless, these localities have been included in the so-called Territorial Development Policy approved by the Government (Government Decree No. 561, May 2006).

1.3. Plan of activities

RAWRA's plan of activities for 2007 as well as the three-year and long-term plans take into account RAWRA's mission, the requirements of the Atomic Act and other legal regulations and are based on an appraisal of the present situation regarding the handling of RW. The annual plan is subdivided into chapters according to the character of the respective activities and their cost classification. The budget structure is set out in Ministry of Finance Decree No. 323/2002 Coll., on budget structuring. The plan has been designed in compliance with the Concept, approved by Government Decision No. 487 of 15 May 2002. The plan is based on RAWRA's objectives which are defined in §26 section 3 of Act No. 18/1997 Coll. Activities connected with nuclear safety and radiation protection are based on an SÚJB permit issued in accordance with §9 section 1 of the Atomic Act.

2. LLW/ILW disposal

2.1. Operation of the Dukovany radioactive waste repository

The repository is operated by RAWRA on the basis of a contract with ČEZ, a.s., (the Czech Power Company), in compliance with §26 of the Atomic Act. The acceptance of waste, as well as certain inspection activities, is provided directly by RAWRA.

RAWRA expects that in 2007 approximately 500 m³ of processed LLW/ILW from the Dukovany and Temelín NPPs will be accepted for disposal. The repository will be operated in such a way that it will be possible to accept RW for disposal on a continuous basis.

Buildings and equipment are inspected annually and the operational maintenance of buildings, land, machinery and electrical equipment carried out when required. Radiation protection, security, emergency preparedness, and nuclear safety are monitored constantly.

2.1.1. Sub-budget – Dukovany repository

A total of CZK 15.8 million is required for the operation and maintenance of disposal vaults and CZK 1.5 million in the form of a subsidy for near-by communities according to Article I, paragraph 54 of Act No. 13/2002 Coll. and in compliance with Government Directives No. 416/2002 Coll. and 46/2005 Coll. CZK 0.3 million is scheduled for small-scale reconstruction work regarded as capital investment.

Center	Item	Name <i>CZK thousands</i>	Budget 2007	Budget 2006	Ratio 07/06
2	5	CURRENT EXPENDITURE	17300	15900	<i>1.09</i>
2	515	Purchase of water, fuel and power	200	0	
2	516	Purchase of services	13500	14400	<i>0.94</i>
2	517	Other purchases	2100	0	
2	590	Other non-investment expenditure	1500	1500	<i>1.00</i>
2	6	CAPITAL EXPENDITURE	300	1300	<i>0.23</i>
2	612	Acquisition of tangible assets	300	1300	<i>0.23</i>
2		TOTAL EXPENDITURE	17600	17200	<i>1.02</i>

2.2. Operation of the Richard and Bratrství repositories

The Richard and Bratrství radioactive waste repositories are operated by RAWRA in compliance with the respective permits issued by the SÚJB and ČBÚ (Czech Mining Office). RAWRA will accept a total of approximately 90 m³ of processed LLW/ILW at the two repositories in 2007.

In 2007 work will be carried out in connection with the safe handling of the radioactive waste disposed of at both repositories according to the regulations in force prior to the passing of the Atomic Act (§28 of the Atomic Act) in line with a decision on subsidy provision. Work will include providing for the standard operation and maintenance of the repositories and ensuring radiation safety, security, emergency preparedness and nuclear safety. In addition, reconstruction of the Richard repository entrance area will continue. In 2007, as in previous years, the now-closed Hostim repository will be monitored.

Furthermore, in conjunction with an approved PHARE project, one of the chambers at the Richard repository will be closed and part of the repository adapted in order to provide sufficient storage capacity for that waste classified as unacceptable for disposal.

2.2.1. Sub-budget - Richard and Bratrství repositories

A sum of CZK 13 million (state subsidy) is required for handling radioactive waste disposed of at the Richard and Bratrství repositories under regulations in force prior to the passing of the Atomic Act according to §28 of the Atomic Act and for providing provisional handling according to §26, section 3, j) and k) of that Act. RAWRA assumes that in 2007 work funded by state budget subsidy at Richard and Bratrství will amount to a sum similar to that of 2006; the exact nature of the work will be disclosed following agreement between the Ministry of Industry and Trade and RAWRA. The sum of CZK 3 million is earmarked as a subsidy to local communities, in compliance with Article I, paragraph 54 of Act No. 13/2002 Coll. and Government Directives No. 416/2002 Coll. and 46/2005 Coll. CZK 7.2 million will be spent on investment at the Richard repository.

Center	Item	Name <i>CZK thousands</i>	Budget 2007	Budget 2006	Ratio 07/06
3	5	CURRENT EXPENDITURE:	19600	23800	<i>0.82</i>
3	501	Salaries	3870	3540	1.09
3	502	Other payments for work done	240	230	1.04
3	503	Mandatory insurance paid by the employer	1439	1319	1.09
3	513	Purchase of materials	774	790	0.98
3	515	Purchase of water, fuel and power	670	670	1.00
3	516	Purchase of services	6950	11600	0.60
3	517	Other purchases	2580	2580	1.00
3	534	Transfers to own funds	70	50	1.40
3	590	Other non-investment expenditure	3000	3000	1.00
3	6	CAPITAL EXPENDITURE:	7200	18300	<i>0.39</i>
3	612	Acquisition of long-term tangible assets	7200	18300	0.39
3		TOTAL EXPENDITURE:	26800	42100	<i>0.64</i>

3. HLW and SNF deep geological repository

According to the Concept high-level radioactive waste and spent nuclear fuel after being declared as waste will be disposed of in a deep geological repository; it is assumed that the construction of such a repository will be in the Czech Republic. In order to safely isolate the radionuclides contained in the waste from the environment until their concentration has decreased to a level no longer dangerous to the environment, the repository will employ a complex system of natural and artificial (so-called engineered) barriers. Details of the geological repository project are outlined in the DGR Reference Design available on RAWRA's website (www.surao.cz). The Concept, approved by the Government, clearly recommends the construction of a deep geological repository for the permanent disposal of such waste. The Concept sets out the following with respect to the construction of a DGR:

- a) selection of a suitable site and determination of its characteristics, including the verification of the stability and homogeneity of the rock mass,
- b) design of the repository itself, including the materials to be used and the composition of the engineered barriers,
- c) full safety analysis,
- d) further research and development.

a) The Concept requires that two candidate sites be included in regional land plans by 2015. A general outline of the project (not taking into consideration the specific requirements of individual sites) has already been proposed and expertly assessed.

Following an assessment of the whole of the Czech Republic², the geological exploration of six potential sites commenced in the second half of 2003 the aim of which was to accumulate enough detailed geological data to allow the further narrowing down of the surface area of sites. The project was managed by RAWRA according to a quality assurance plan specifically drawn up for the purpose. The site selection process is divided into stages with respect to the character of the work involved and the respective legal regulations. Work completed up to 2004 was classified as a geological research (Act No. 62/1988 Coll., on geological activity) and no specific surveying approval was required. By the end of 2005 an evaluation of aerial geophysical, Earth long-distance, and terrain reconnaissance data had been completed and the data entered into the geological information system. In addition, investigative work was underway at the Melechov test site.

The choice of the site for a DGR will be made according to a comprehensive assessment of all relevant technical criteria and requirements (the DGR will have to remain isolated from the environment a period of the order of 100 thousand years). In the event that a larger number of sites than required comply with the safety and technical requirements, non-technical criteria (e.g. the attitude of the local population) will be considered when further narrowing down the number of eligible sites. Currently, public opinion at all the prospective sites is predominantly against the building of a DGR therefore RAWRA has suspended geological work at all the sites until 2009 until which time the parties involved will strive to find mutually acceptable conditions which will allow the continuation of geological exploration. In May 2006 Government Decree No. 561 approved the Policy for the Territorial Development of the Czech Republic in which potentially suitable sites for the construction of a DGR are included. The Concept requires that two suitable localities be determined by 2015.

Preliminary studies regarding the environmental impact of DGR construction at the six sites will commence within the next year. In addition, RAWRA intends to conduct opinion polls on the issue at these localities. RAWRA plans to prepare the documentation necessary for applying for permission to determine survey areas from 2009 onwards.

b) The DGR program also comprises the preparation of a general project design, including proposals for and the verification of the long-term behavior of the engineered barriers (disposal containers, sealants and back-fill materials) part of RAWRA's long-term aims set out in Chapter 8 below. In addition to exploiting foreign research into the construction of a DGR, domestic research will also play its part. Thanks to the participation of Czech institutions in projects of the 6th EC general plan for science and research and thanks to various bilateral contacts and international cooperation, the effective accumulation of knowledge is assured and the development of domestic research firmly established. It is intended that international cooperation will be maintained in future years. Ongoing projects on the research of back-fill and sealants and the determination of methods for the evaluation of engineered barrier materials will continue into next year. Moreover, a long-term project for the updating of the DGR reference design will be commissioned the aims of which will include updating the DGR budget, the incorporation of the latest domestic and foreign R&D knowledge, a complex assessment of DGR safety, and the preparation of this documentation for assessment by the SÚJB and relevant international agencies. Furthermore, RAWRA

² The results of the survey of the Czech Republic were published in RAWRA's 2002 Annual Report approved by Government Decision No. 642 of 30 June 2003

intends to prepare an architectural study of the surface premises of a DGR at the Rohozná locality.

c) A final decision on the suitability of such a disposal system will be based on a thorough safety analysis based on the characteristics of various host rock formations and on an evaluation of the behavior of the engineered barriers incorporating foreign experience and computer modeling techniques.

Data for such a safety analysis will also be obtained from the examination of natural systems with properties approaching those of a future repository (natural analogues). Data obtained from the analysis of the behavior of natural analogues will also be used for the validation of models used in the prediction of the long-term repository behavior.

d) In addition to preparing a program for the construction of a geological repository RAWRA supports, in compliance with §26, section 3, g) of the Atomic Act, ongoing research and development into radioactive waste disposal. In compliance with specific aims set out in the Concept, RAWRA supports the involvement of research institutions in the development and application of new technologies for handling RW and the reprocessing of spent nuclear fuel (transmutation technology).

3.1.1. Sub-budget – deep geological repository for HLW and SNF

Item 513 contains expenses for furnishing information centers in individual localities, item 516 comprises expenses for the maintenance and operation of these information centers and for foreign excursions (e.g. a repository under construction at Gorleben, Germany) for representatives of potential sites, item 611 comprises expenses for geological exploration at the Melechov test site, design work, the study of natural analogues, the preparation of safety analyses, the research and application of new technologies for handling RW and transmutation, item 612 is devoted to the reconstruction of and investment at the various information centers.

Center	Item	Name	Budget 2007	Budget 2006	Ratio 07/06
		<i>CZK thousands</i>			
4	5	CURRENT EXPENDITURE	3800	2600	<i>1.46</i>
4	513	Purchase of material	500	500	<i>1.00</i>
4	516	Purchase of services	2700	2100	<i>1.29</i>
4	517	Other purchases	600	0	
4	6	CAPITAL EXPENDITURE	36400	37900	<i>0.96</i>
4	611	Acquisition of long-term intangible assets	35900	37400	<i>0.96</i>
4	612	Acquisition of long-term tangible assets	500	500	<i>1.00</i>
4		TOTAL EXPENDITURE:	40200	40500	<i>0.99</i>

4. Management, technical, legal, and administrative activities

In addition to the responsibilities outlined above, RAWRA also provides for a number of other activities either directly connected with RAWRA's objectives or as a consequence of binding regulatory requirements.

Application for permits

The operation of repositories and other activities for which RAWRA is responsible are carried out in compliance with respective SÚJB permits, issued under the terms of the Atomic Act. Respective documentation is updated whenever necessary.

Keeping records on accepted radioactive waste and nuclear materials

The keeping of records on accepted radioactive waste and the generators thereof is the responsibility of RAWRA according to §26, section d) of the Atomic Act. Such record keeping is specified in detail in Decree No. 307/2002 Coll. Records on accepted RW are kept both in paper and electronic form. All the RW accepted by RAWRA is recorded in the ZISS electronic database into which historical data that to date has been kept only in a written is gradually being entered. A digital archive of RW passports is also maintained into which data from written passports of RW accepted for disposal prior to the transfer of repositories into state ownership (i.e. before 2000) is being entered.

In addition to keeping records on accepted RW, RAWRA also compiles data on expected future RW generation. Records on nuclear materials are kept in compliance with Decree No. 316/2002 Coll.

Administration of payments to the nuclear account

Payments to the nuclear account are administered according to §27 of the Atomic Act, Government Decree No. 416/2002 Coll., on the amount and methods of payment of funds from radioactive waste generators to the nuclear account, Act No. 337/1992 Coll., on the administration of taxes and fees as amended, the RAWRA statute, and principles for the administration of funds in the nuclear account issued by the Ministry of Finance on 28 April 2000, identification number 193/25 900/2000. In compliance with §3 of Government Directive No. 416/2002 Coll. detailed records are kept on individual payments to the account.

In compliance with §27 of the Atomic Act the Ministry of Finance invests surplus funds in the nuclear account in the financial market.

In 2007 RAWRA will reassess the amounts of payments from generators to the nuclear account in connection with an updated assessment of geological repository reference design costs.

Supervision of licensee reserve funds for the decommissioning of their facilities

In compliance with §26, section 3, h) of the Atomic Act, RAWRA supervises obligatory licensee reserve funds set aside for the decommissioning of nuclear facilities according to §18, section 1, h) of the Act. Organizations for which an estimate of decommissioning expenses has been issued and for which RAWRA has obtained notification from the SÚJB that the respective organization is a licensee (and is in possession of an approved proposal for decommissioning) are included in the control process. If necessary, proposals for remedial measures will constitute a part of reserve fund inspection reporting.

Public relations

As far as public relations is concerned, RAWRA's long-term aim is to provide the public with up to date and easily understandable information concerning the handling of radioactive waste. RAWRA has adopted a pro-active approach to the PR issue and aims to improve general awareness of the existence of radioactive waste in the Czech Republic and the necessity for its safe disposal. Of the range of communication methods available (booklets, excursions, press releases, articles in the media etc.) RAWRA has decided to prioritize the use of the internet and its information centers. Communication with the general public is primarily directed at communities in the vicinity of those localities where it is assumed a deep geological repository will be constructed. Based on a memo of understanding, RAWRA intends to intensify communication with communities in the Rohozná locality.

The approach of the PR department is to improve the general public's understanding of RW issues and to remove deeply entrenched psychological barriers, as well as to address potential future conflicts of interest. Organized excursions for residents of potential DGR sites to both domestic and foreign waste disposal facilities (i.e. to Gorleben, Germany, or Äspö, Sweden) have proved very popular and RAWRA anticipates increasing the number of its information centers. Small promotional items featuring RAWRA's logo (e.g. pencils, notepads, calendars, caps, T-shirts etc.) have been purchased for distribution at these information centers and for other publicity events.

In spring 2007, on the initiative of the Ústí nad Labem (North Bohemia) Regional Council, small seminars are planned for employees of Environmental Protection Departments in regions containing working repositories. It is planned that such seminars will be organized for community representatives of localities provisionally selected for the siting of a deep geological repository. At the same time, excursions to the Richard and Dukovany repositories will be organized for interested parties. Such activities are seen as an essential first step in increasing the awareness of RW issues before geological survey work commences at these localities. At the same time, RAWRA is keen to know how the public view the RW issue in all six localities. Therefore opinion polls are planned the results of which will be used as the basis for subsequent communication strategy planning and other PR activities.

Foreign cooperation

Every country that exploits ionizing radiation sources must at some time or other face up to the problem of radioactive waste disposal. Due to the complexity of this issue there is a high degree of international cooperation. International institutions coordinate most RW issues and are active in instigating legislative and regulative initiatives and furthermore they provide opportunities for experts to meet and for the mutual exchange of information. International cooperation is particularly effective in evaluating radioactive waste repository safety, promoting the feasibility of deep geological repositories and the development of new technologies. It is therefore imperative that RAWRA take advantage of any international opportunities that present themselves.

Quality assurance, control and safety

RAWRA has designed and strictly adheres to a quality assurance system which conforms to the requirements of respective legal regulations (the Atomic Act and SÚJB Decree No. 214/1997 Coll., on quality assurance in connection with the use of nuclear energy and activities involving the risk of irradiation and on the criteria for the safety classification of selected facilities). The quality system will be continuously maintained and updated. RAWRA intends to prepare for the certification of its quality management system according to the ISO 9000 and ISO 14000 standards.

Health and safety at work training is organized on a continuous basis at all RAWRA's facilities and is regularly updated and revised according to new legislation. Fire protection training is provided at relevant former mining facilities in conjunction with mining administration agencies.

Personnel, material and technical provisions

In 2006 RAWRA had a total of 38 employees including those involved in security at the Richard and Bratrství repositories.

Since the end of 2000 RAWRA's headquarters have occupied one floor and part of the ground floor and basement of the Ministry of the Interior building in Dlážděná Street, Prague.

4.1.1. Sub-budget – management, technical, and administrative activities

Center	Item	Name <i>CZK thousands</i>	Budget 2007	Budget 2006	Ratio 07/06
1	5	CURRENT EXPENDITURE	21800	20700	<i>1.05</i>
1	501	Salaries	9560	8610	<i>1.11</i>
1	502	Other payments for work done	560	560	<i>1.00</i>
1	503	Mandatory insurance paid by the employer	3542	3210	<i>1.10</i>
1	513	Purchase of materials	1039	1078	<i>0.96</i>
1	514	Interest and other financial expenditure	50	0	
1	515	Purchase of water, fuel and power	620	580	<i>1.07</i>
1	516	Purchase of services	3928	4180	<i>0.94</i>
1	517	Other purchases	2310	2310	<i>1.00</i>
1	534	Transfers to own funds	191	172	<i>1.11</i>
1	6	CAPITAL EXPENDITURE	1100	500	<i>2.20</i>
1	611	Acquisition of long-term intangible assets	110	150	<i>0.73</i>
1	612	Acquisition of long-term tangible assets	990	350	<i>2.83</i>
1		TOTAL EXPENDITURE:	22900	21200	<i>1.08</i>

5. Summary budget for 2007

This chapter sets out RAWRA's summary budget for 2007 itemized into individual cost centers, together with aggregated data.

	<i>CZK thousands</i>	1 SÚ	2 ÚDU	3 ÚRB	4 HÚ	Total
5	CURRENT EXPENDITURE	21800	17300	19600	3800	62500
501	Salaries	9560		3870		13430
502	Other payments for work done	560		240		800
503	Mandatory insurance paid by the employer	3542		1439		4981
513	Purchase of material	1039		774	500	2313
514	Interest and other financial expenditure	50				50
515	Purchase of water, fuel and power	620	200	670		1490
516	Purchase of services	3928	13500	6950	2700	27078
517	Other purchases	2310	2100	2580	600	7590
534	Transfers to own funds	191		77		269
590	Other non-investment expenditure	0	1500	3000		4500
6	CAPITAL EXPENDITURE	1100	300	7200	36400	45000
611	Acquisition of long-term intangible assets	110			35900	36010
612	Acquisition of long-term tangible assets	990	300	7200	500	8990
690	Other capital expenditure	0	0	0	0	0
	TOTAL EXPENDITURE:	22900	17600	26800	40200	107500

Key:

- | | |
|-------------------------|---------------------------------------|
| 1) RAWRA administration | 3) Richard and Bratrstvi repositories |
| 2) Dukovany repository | 4) Deep geological repository |

RAWRA budget for 2007 - aggregate data, CZK thousands

Item	Description	Y2007
	EXPENDITURE	
5	Current expenditure	62500
501	Salaries	13430
502	Other payments for work done	800
503	Mandatory insurance paid by the employer	4981
5342	Transfer to the cultural and social fund	269
6	Capital expenditure	45000
61	Purchase of investment assets and related expenditure	45000
	T o t a l e x p e n d i t u r e :	107500
	INCOME	
411	Non-investment subsidies obtained from the public budget at central level	62500
4119	Non-investment subsidies obtained from the public budget at central level - income from the state budget	13000
421	Investment subsidies obtained from the public budget at central level - income from the nuclear account	45000
	T o t a l i n c o m e :	107500

6. Fulfillment of Government Decisions

RAWRA's budget for 2006 and RAWRA's plan of activities were approved by Government Decision No. 1541 of 30 November 2005. The Authority's 2006 performance will be presented in the Annual Report to be submitted to the Government for approval in the first half of 2007.

7. Three-year plan

The plan for the period 2007-2009 is based on the current situation vis-a-vis the operation of repositories presented above and on the long-term plan outlined in Chapter 8. This chapter provides cumulative information and assumed income and expenditure for the period 2007-2009.

7.1. LLW/ILW disposal

7.1.1. Dukovany repository

The repository will continue to be operated by ČEZ, a.s. RAWRA's responsibilities will involve the acceptance of radioactive waste at the repository (the fulfillment of acceptability criteria) and the planning of repository repairs and maintenance so that it conforms with the requirements of respective legislation. Repository operation is seen as stable and safe in the long term. RAWRA does not foresee any unduly high repair or reconstruction costs in the immediate future.

Expenditure required for providing the safe operation of the Dukovany repository, including partial reconstruction is expected to amount to approximately CZK 18 million per year.

7.1.2. Richard and Bratrství repositories

The safe operation of these repositories will continue to be provided both by RAWRA and by sub-contractors. Ongoing repairs and the reconstruction of the entrance hall at the Richard repository will be completed as planned as will projects for the closure of filled disposal chambers. With regard to existing mining legislation and ongoing geotechnical monitoring no serious difficulties are foreseen in the operation of these repositories. Expenditure on the current operation of these repositories, including work on the storage chambers, is expected to be CZK 20 million per year; the cost of completing reconstruction work and repairs is estimated at CZK 15 million over the next three years.

7.2. HLW/SNF disposal

The geological exploration required for a detailed characterization of potential DGR sites was suspended in 2005 due to the predominantly negative attitude of the general public to future DGR construction. It is expected that work will resume after 2009 after RAWRA obtains the necessary survey permits.

Research continues into the behavior of engineered barriers in order to obtain detailed data for the design of the disposal system details of which are presented in the geological repository reference project. Safety analysis preparation will continue, the data required for an accurate assessment of the feasibility of a geological repository will be collected as will real data for the validation of safety calculations and, together with a more detailed knowledge of the localities themselves, it should be possible to address the issue of the actual site of a future repository more accurately.

Research and development will concentrate on monitoring the development of new technologies for the treatment of existing waste particularly transmutation.

The financing necessary for the geological exploration involved in the selection of a suitable site will be finally determined as work progresses; budgets for the various projects are presented in the respective documentation.

7.3. Anticipated nuclear account income and RAWRA expenditure 2007 - 2009

7.3.1. Anticipated nuclear account income

RAWRA is funded from the nuclear account which is considered a state financial asset. Nuclear account income is made up of mandatory contributions from ČEZ and from other waste generators stipulated in Government Directive No. 416/2002 Coll., as well as revenue accruing from the investment of nuclear account assets in the financial market administered by the Ministry of Finance. RAWRA also receives income in the form of a subsidy from the state budget according to §28 of the Atomic Act for the handling of RW disposed of prior to the Act coming into force.

<i>CZK thousands</i>	2007	2008	2009
ČEZ contribution	1 300 000	1 300 000	1 300 000
Other contributions	3 000	3 000	3 000
Revenue from investments	235 000	275 000	325 000
Total	1 538 000	1 578 000	1 628 000

7.3.2. Anticipated RAWRA expenditure

Year	Item	Name <i>CZK thousands</i>	1	2	3	4	Total
			SÚ	ÚDU	ÚRB	HÚ	
2007	5	CURRENT EXPENDITURE	21800	17300	19600	3800	62500
	6	CAPITAL EXPENDITURE	1100	300	7200	36400	45000
		TOTAL EXPENDITURE:	22900	17600	26800	40200	107500
2008	5	CURRENT EXPENDITURE	22800	17800	18000	4700	63300
	6	CAPITAL EXPENDITURE	700	500	4500	39000	44700
		TOTAL EXPENDITURE:	23500	18300	22500	43700	108000
2009	5	CURRENT EXPENDITURE	24000	18500	17500	4700	64700
	6	CAPITAL EXPENDITURE	500	500	3500	45800	50300
		TOTAL EXPENDITURE:	24500	19000	21000	50500	115000

Captions:

- 1) RAWRA administration
- 2) Dukovany repository

- 3) Richard and Bratrstvi repositories
- 4) Deep geological repository

8. Long-term plan

The long-term plan is based on the Concept and sets out more precisely the milestones involved in the eventual construction of a deep geological repository in the Czech Republic to be put into operation in 2065 and able to accept all categories of radioactive waste.

8.1. LLW/ILW disposal

RAWRA will continue to provide for the operation of all the Czech Republic's LLW/ILW repositories (Dukovany, Richard and Bratrství) as well as for the monitoring of the now-closed Hostim repository in conformance with respective SÚJB and mining permits. At the present rate of RAW production the capacity of these repositories is sufficient for the next several decades. The construction of new LLW/ILW repositories is not anticipated. The gradual closure of disposal chambers at the Richard and Bratrství repositories will continue; after the closure of all the chambers future operational strategy will depend on an overall assessment of LLW/ILW waste disposal and on the anticipated production of RW.

Repository operational costs are expected to amount to approximately CZK 40 million per year to be specified more precisely on a year-by-year basis. A state subsidy is expected to finance the safe operation of the Richard and Bratrství repositories in compliance with the Atomic Act.

8.2. HLW/SNF disposal

In order to fulfill the aims of the Concept two potential DGR localities must be included in land-use plans by 2015 concerning which the approval of the general public is the only limiting factor. Provided that geological survey work is allowed to commence after 2009, there should be enough time to accumulate sufficient data to allow the identification of a suitable site by 2015 after which a more precise characterization will be made. The determination of survey areas agreed by the Ministry of the Environment is necessary before geological exploration can commence.

Site characterization stage (2009 - 2015)

This stage will involve the geological exploration of selected survey areas. In order to fulfill the aims of the Concept it will be necessary to verify the suitability of two sites.

The basic work schedule is set out in a document entitled the "Project of work at a hypothetical locality" (ÚJV Řež 1999). This document will be updated with respect to the geological survey results already available, to the development of geological methods, and to results obtained at the test site. Geological survey work in the so-called reconnaissance period comprises the verification of the depth of the granitic body, a long-distance Earth survey, geological mapping, a geophysical selection survey, shallow drilling, geochemical screening, the setting up of a hydrological monitoring network, the monitoring of material flows and critical loads in small areas, hydro-geological monitoring, geological engineering mapping, a determination of the basic geotechnical characteristics of the surface area of the rock formation and interpreting geophysical as well as geochemical profiles. The realization stage will involve the following: drilling, logging, a detailed geophysical survey, structural petrological analysis, petrographical and mineralogical exploration, the continuation of hydrological monitoring and the monitoring of material flows, and studies of hydro-geology,

geochemistry, geological engineering and geotechnology. The aim during the period 2009 - 2015 will be to maximize the amount of data gathered on potential sites whilst meeting the requirements of the Ministry of the Environment.

The design of an eventual DGR will include the underground and surface areas as well as the surrounding infrastructure. Research into engineered barrier materials will continue and will include the design of equipment for the testing of these materials and the preparation of test samples. By 2012 RAWRA aims to have prepared an updated DGR design including a comprehensive evaluation of safety issues.

Inclusion of candidate sites in land-use plans (2015)

In those sites assessed by the geological survey as suitable for the siting of a DGR it will be necessary to protect them. To this purpose the two sites finally chosen will be declared protected areas for “special intervention into the Earth’s crust” according to Act No. 44/1988 Coll. (Mining Act), as amended. In order to do so, these sites must be included in local land-use plans which will prevent any later conflict of interests.

8.3. Anticipated income and expenditure

Anticipated income

As mentioned above, nuclear account income is made up of payments by ČEZ, stipulated by Government Directive No. 416/2002 Coll. and revenues from other waste generators the investment of available funds in the financial market. Since the commissioning of the Temelín NPP ČEZ’s annual payments to the nuclear account amount to approximately CZK 1.3 billion. RAWRA is required to carefully monitor payments into and withdrawals from the account as well as the overall accumulation of funds. Currently ČEZ pays CZK 50 per MWh produced by its NPPs, an amount considered sufficient in the medium term. The revenue from the investment of surplus funds has a substantial effect on the overall balance of the nuclear account and the extent of payments made by RW producers. Therefore close attention is paid to the returns provided by such investments (decided upon by the Ministry of Finance).

Anticipated expenditure

Annual expenditure on the LLW/ILW repositories (Dukovany, Richard and Bratrství) amounts to approximately CZK 40 million and covers disposal, maintenance of land, buildings, equipment and the underground areas (Richard and Bratrství), radiation protection, security, fire safety, emergency preparedness, and the monitoring of impacts on the environment.

These radioactive waste repositories were in operation for several decades before the Atomic Act came into force during which time no reserve funds were accumulated for future related expenditure (i.e. decommissioning and closure). Hence the state provides funding for handling such waste. The state’s responsibilities consist of the following:

- ◆ maintenance of underground chambers and repairs to equipment
- ◆ monitoring of impacts on the environment both during repository operation and after closure,

- ◆ preparation for repository decommissioning - development of the technology for sealing storage chambers and closing parts of repositories,
- ◆ R&D.

The state financial contribution is estimated at approximately CZK 320 million (2001). A substantial part of such funding will go to the permanent closure of filled disposal chambers at the Richard and Bratrství repositories.

Substantial expenditure on the actual construction, operation and closure of a DGR, the processing of spent nuclear fuel into a form suitable for disposal and on the final disposal of spent nuclear fuel and high level waste will commence no earlier than 2050. Expenditure on the preparation stage (to 2015) is estimated at approximately CZK 600 million at 2006 price levels (comprising expenditure on the design of the DGR and geological survey work). Payments to the nuclear account will be regularly reassessed in cooperation with the Ministry of Finance in order to provide the optimum funding for the eventual construction of a DGR in the Czech Republic.