Úrad jadrového dozoru SR

TM on the Establishment of a Radioactive Waste Management Organization as recommended by the 3rd Review Meeting of the Joint Convention

Report from Slovakia

Session 2 (Part 2)

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vúje SCK·CEN

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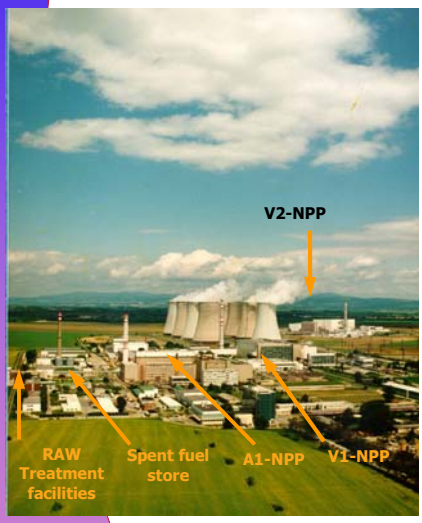
Overview of the SF&RAW Management facilities in the Slovak Republic

Nuclear Facilities in Slovakia

BOHUNICE

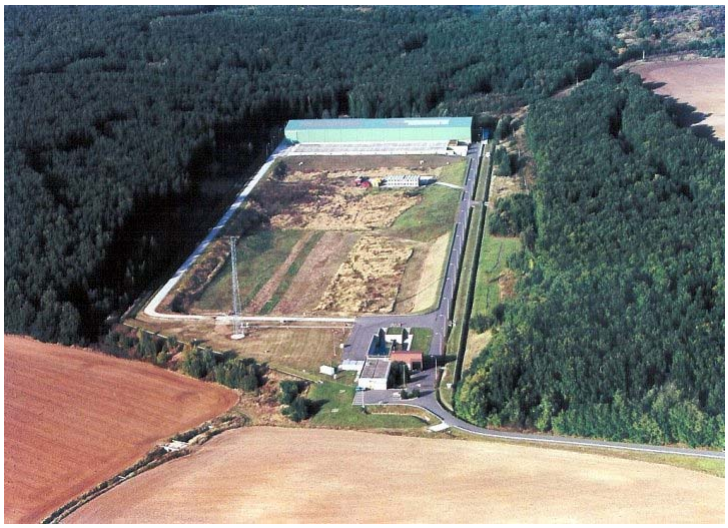


- A1 NPP, HWGR, 150 MWe, experimental/production reactor, under decommissioning until 2033
- V1 NPP, 1st unit shutdown in 2006, 2nd in 2008,
- V2 NPP, shutdown beyond 2020,
- New NPP - currently under consideration
- Interim Spent Fuel Storage for V1, V2 NPP, wet type
- Complex radwaste treatment/conditioning facility

FS KRAO MOCHOVCE

- The Centre for Treatment and Conditioning of Liquid Radioactive Waste (FS KRAO) in Mochovce

MOCHOVCE NEAR SURFACE TYPE REPOSITORY for L&IL Waste



Phare

Outcomes of the Phare Project No. 5812.07.01

Technical Support for the Ministry of Economy of the SR in Establishing the National Institution – Agency for Radioactive Waste and Spent Fuel Management

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Outcomes of the Phare Project No. 5812.07.01

- Beneficiary: Ministry of Economy of the SR
- Contracting Authority: Ministry of Finance of the SR
- Receiving institution: Slovak Nuclear Regulatory Authority
- Start/End of the project: December 2005/December 2006
- Solutionists: vúje SCK·CEN

Outcomes of the Phare Project No. 5812.07.01

- The Project solution was performed in three main phases:

Phase 1:

Comparison of Slovak infrastructure of RAW and spent nuclear fuel management to the system used in the EU countries having comparable conditions and the development of the institution – agency design.

Phase 2:

Designing the structure of the institution – agency, its individual systems, and basic operational documents preparation.

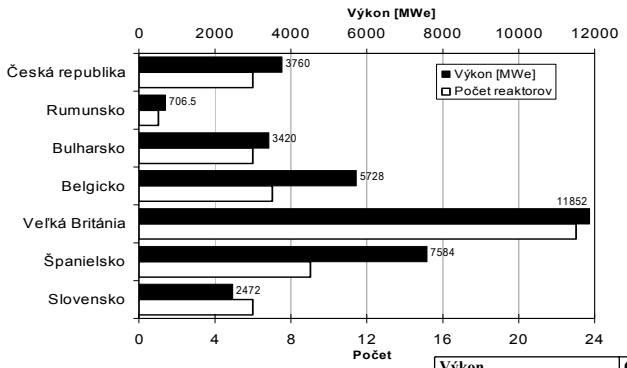
Phase 3:

Technical help to revise or develop the operational documents.

Phase 1:
Comparison of Slovak infrastructure of RAW and spent nuclear fuel management to the system used in the EU countries having comparable conditions and the development of the institution – agency design

- a comparative analysis was elaborated which compares RAW and SF management in six chosen countries:
  - The Czech Republic
  - Romania
  - Bulgaria
  - Belgium
  - The United Kingdom of Great Britain and Northern Ireland
  - Spain.

Graph 1: Comparison of the total output of nuclear reactors (*2006)



Výkon	Output
Počet reaktorov	Number of reactors
Počet	Number
Česka republika	Czech Republic
Rumunsko	Rumania
Bulharsko	Bulgaria
Belgicko	Belgium
Veľká Británia	Great Britain
Španielsko	Spain
Slovensko	Slovakia

Table No. 1:
Brief Overview of the main aspects of RAW and SF management in chosen countries

Country (agency)	RAW*	Primary legislation	Organizational frame	Financing RAW management
Czech Republic (SÚRAO)	NPP, nuclear research, uranium repositories. (Several repositories are run)	Nuclear Law contains SÚRAO, that is established by Ministry Act. Law about the levies height into Nuclear Account.	SÚRAO + authorized subjects: Complex RAW management	Levies from originators to Nuclear Account administered by Ministry of Finance.
Romania (ANDRAD)	NPP, nuclear research, production of nuclear fuel, uranium mining (Repository at Baita Bihor)	Nuclear Law, national strategy, establishing ANDRAD.	ANDRAD coordinates, however, most originators have their own RAW management.	Direct contributions from originators in accordance with government decision.
Bulgaria (RAW state owned enterprise.)	NPP, nuclear research, uranium mining. (Repository at Novi-Han)	Nuclear Law, that establishes RAW state enterprise and a fund for RAW disposal and management + government edicts about levies to the fund	State enterprise RAW: complex RAW management from receipt from the originators.	Levies from originators to nuclear account under the protection of Ministry of Energetics.

Table No. 1- cont.

Country (agency)	RAW*	Primary legislation	Organizational frame	Financing RAW management
Belgium (ONDRAF/ NIRAS)	NPP, nuclear research. Facilities for RAW treatment and conditioning	Edicts about protection of inhabitants against radiation, edict about establishing OND/NIR	ONDRAF/NIRAS: complex RAW management, subsidiary Belgoprocess – RAW techn. handling	Funds for specific purposes, tariff system ensures costs absorbing, it is valid also retroactively.
Great Britain (Nirex)	NPP, nuclear research, production of nuclear fuel. (Repository at Drigg)	Law about radioactive materials, National Strategy.	Nirex: only disposal of intermediate and low-active RAW+research and development	Originators are shareholders and pay after expected disposing volumes.
Spain (ENRESA)	NPP, nuclear research, uranium mining and processing, production of nuclear fuel, nuclear facilities decommissioning, (Repository at El Cabril)	Nuclear Law, law about establishing ENRESA, Ministry Act about financing and authorities, etc.	ENRESA complex RAW management	Fund into which contributions are paid by waste originators according to tariffs (difference among small and large originators).
Slovakia (???)	NPP, nuclear facilities decommissioning. Facilities for RAW processing and modification, (Repository at Mochovce)	Nuclear Act, National Strategy of RAW management, Establishing a Fund for RAW Disposal and Management Act.	ÚJD SR and Ministry of Health execute government control, SE leads RAW manag. with SE-VYZ subsidiary.	Fund of nuclear facilities decommissioning and RAW manag., into which nuclear facilities runners contribute.

Table No. 2:
Powers extent of agencies for RAW in compared countries

Agency	LILW			RAW and SF		Nuclear facilities decom.	Fund administration	Research and Development
	Treatment and Conditio-ning	Storage	Long-term dispo-sal	Storage	Long-term disposal			
SU RAO (CZ)	K	v	V		V		Ko, V	K, V
SP RAO (BG)	v	v	V			V		V
ANDRAD (RO)			V		V	K		K, V
NIRAS/ONDRAF (B)	K, v	V	V	V	V	K, V	Ko	K, V
NIREX (UK)			V			v (NDA)		v
ENRESA (SP)	Ko, v	v	V	K	V	K	V	V

K – coordination; Ko – control; V – execution (small letter means that agency provides this activity only partially), NDA – Nuclear Decommissioning Authority in Great Britain

Conceptual proposal the Structure of RAW and SF management in the conditions of the Slovak Republic

Activities to be executed within the integral RAW and SF management:

- Managing and strategic activities
- Technical activities linked to
  - RAW and SF disposal
  - Treatment and conditioning of RAW and SF
  - Decommissioning
  - Shipment of RAW and SF

Two alternatives of the structure of the RAW&SF Management Organization :

- **Alternative 1:** All the powers are executed by one single organization
- **Alternative 2:** The Agency is responsible for disposal of RAW, a daughter „operating“ company executes all the other powers

SWOT analysis (Strengths, Weaknesses, Opportunities, Threats) * as referred to the situation in 2006

Alternative 1: One entity	Alternative 2: Agency + Operator
Strengths •Facilitation of consistency between strategy, policy, implementation and communication, •One single focal point to be addressed by various stackeholders(originators, public, etc.), •Only one entity to create and one licensee, •Flexibility in the use of resources, •Economy of scale,	Strengths •Transparency with in terms of responsibilities, funding, licensing and costs and liabilities, •Contributing to lessen mistrust by public in the operations, •Flexibility to operate on commercial basis, •Existing structure in several countries, •Focus on strategic, managerial and policy aspects separated from operational aspects,

SWOT analysis (Strengths, Weaknesses, Opportunities, Threats)

Alternative 1: One entity	Alternative 2: Agency + Operator
Weaknesses •Agency is a waste generator, which creates conflicts of interests •Lack of transparency for external parties and stackeholders , •Administrative load to reach required level of transparency •Rigidity of structure in responding to the variety of WM challanges and changing context, •No similiar international case in countries with nuclear power generation	Weaknesses •Effort to harmonize and streamline communication between the two entities in a formal manner needed, •Duplicity of general management functions •Multiplication of involved parties

SWOT analysis (Strengths, Weaknesses, Opportunities, Threats)

Alternative 1: One entity	Alternative 2: Agency + Operator
Opportunities •Transformation of existing structures (GovCo).	Opportunities •Possibility of future involvement of private sector by implementation of PPP principle (Private Public Partnership) stimulated by European structures, •Commercial use of free waste processing capacities, •Implementation of proposal is possible before 2012.
Threats •Cannot be implemented before 2012, •Possibility of forming an illegal situation in case of change of term „waste generator“ (i.e. to waste generator = electricity producer)	Threats •Reorganizations give rise to social concern of personnel in concerned organizations

RECOMMENDATIONS FROM THE PREVIOUS REVIEW MEETINGS OF THE JOINT CONVENTION ON THE SAFETY OF SFM&RWM

Recommendations from the previous Review Meetings of the Joint Convention on the Safety of SFM&RWM

- **Recommendation from the 2nd Review meeting of the Joint Convention on the Safety of SFM&RWM**
  - **Full functionality of GovCo company**
- **Recommendation from the 3rd Review meeting of the Joint Convention on the Safety of SFM&RWM**
  - **Establishment of a department within JAVYS being responsible for a waste package quality assurance/control**

3rd Review Meeting of the JC Challenge No 5 Independent waste disposal organisation

The responsibilities of Nuclear and Decommissioning Company – JAVYS (former GOVCO) are:

- **operator of the Bohunice V-1 NPP (shut down in 2006 and 2008)**
- **decommissioning of the A-1 NPP (shut down in 1977)**
- **operator of the waste disposal facility (LLW & MLW)**
- **operator of waste treatment and conditioning facilities**
- **operator of the interim spent fuel storage facility**

After several organisational changes JAVYS is a well established organisation with adequate financial and human resources to fulfil its responsibilities.

CURRENT STATUS AND CONCLUSIONS

Current Status and Conclusions

- **Legal framework**
  - **proposal of necessary legislative changes are already implemented into the Atomic Act**

Section 3, paragraphs 9 and 10:

(9) Disposal of radioactive waste or spent fuel based on authorisation issued by the Authority, may only be undertaken by a legal person independent of the originator of radioactive waste, established by Ministry of Economy of the Slovak Republic (hereinafter "Ministry of Economy") until 2012.

(10) Disposal of radioactive waste or spent fuel on the territory of the Slovak Republic is prohibited for other than the legal person pursuant to Section 9 above.

Current Status and Conclusions

- A new gamma scanner for independent control of containers is installed at Mochovce Repository

Summing up ...

Type of Liability	Long Term Management Policy	Funding of Liabilities	Current Practice / Facilities	Planned Facilities
Spent Fuel	Geological disposal or reproc.	National Nuclear Fund	Long term storage	Geological disposal
Nuclear Fuel Cycle Waste	Geological/ surface disposal	National Nuclear Fund	Disposal of LLW and MLW	Geological disposal for HLW
Application Wastes	under approval	Reexport or financial guarantee	Storage	Disposal (with some exeptions)
Decommissioning Liabilities	Immediate decommissioning	National Nuclear Fund	Immediate decommissioning	Low active soil and concrete debris dispos. facility
Disused Sealed Sources	under approval	Reexport or financial guarantee	Storage	Disposal (with some exceptions)