



Belgian Russian Cooperation Working program 2007

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Belgoprocess

CEG Meeting Brugge
5-6 September 2007

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Framework

- Belgian Federal Governmental Framework
Royal Decree April 25th 2007
- Increase of safety of nuclear facilities
- Central and Eastern Europe and CIS
- Bilateral Agreements



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Bilateral Agreement with Russia

- Yearly program and budget
- First Agreement: 2-12-2005
- Work Program 2006
Budget: 357.000 EURO
- Work Program 2007
Budget: 372.000 EURO
- Plan 2008-2012
to be determined



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Bilateral Agreement with Russia

- Russian partners
 - ~ Rosatom
 - ~ FGUP SevRAO
 - ~ International Centre for Environmental Safety (ICES)
 - ~ OKBM Special Design Bureau
 - ~ NIKIET
 - ~ SUE Moscow SIA RADON
 - ~ Leningrad Specialized Komdinat RADON
 - ~ Murmansk region economical development



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Bilateral Agreement with Russia

■ Belgian partners

- ~ Belgoprocess
- ~ Belgatom (Tractebel Engineering & Belgonucleaire)
- ~ SCK-CEN
- ~ AVN



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Bilateral Agreement with Russia

■ Work Program 2007

- ~ Project 1
Development of a technology for the thorough decontamination of radioactively contaminated metal equipment and/or metallic waste of complicated shape.



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Bilateral Agreement with Russia

■ Work Program 2007

~ Project 1

- Identification and characterization of metallic waste streams for which cost effective decontamination techniques can be implemented.
- Definition of the treatment/evacuation pathways for SNF canisters, steel and lead material.



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Bilateral Agreement with Russia

■ Work Program 2007

~ Project 1

- Status
 - ~ Collection of data in progress
 - ~ Analysis of the waste streams in progress



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Bilateral Agreement with Russia

■ Work Program 2007

~ Project 2

Development of a technology and equipment for fragmentation of bulky equipment and materials.



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Bilateral Agreement with Russia

■ Work Program 2007

~ Project 2

- Description and lay-out of the intervention and decontamination areas.
- Description of equipment for fragmentation.
- Description of ventilation and filtration systems.
- Individual protection equipment and ergonomics associated with dismantling operations in a hostile environment.
- Visit of existing installations on Belgoproces and SCK-CEN in Belgium.



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Bilateral Agreement with Russia

■ Work Program 2007

~ Project 2

■ Status

- ~ Collection of data in progress.
- ~ Technical specifications : will start in october 2007.
- ~ Visit of existing installations on Belgoprocess and SCK-CEN in Belgium during the next meeting (end 2007)



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Bilateral Agreement with Russia

■ Work Program 2007

~ Project 3

Development of a technology and equipment for fragmentation and conditioning of high-level solid wastes (ICES, NIKIET).



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Bilateral Agreement with Russia

■ Work Program 2007

~ Project 3

- Description of industrial applications of the Electro-erosion technique by Electrical Discharge Machine (EDM)
- Application to the Russian case
 - ~ Collection of data regarding shells, rods, casks, storage pools
 - ~ Feasibility study of the technique and preliminary recommendations



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Bilateral Agreement with Russia

■ Work Program 2007

~ Project 3

- Status
 - ~ Still under preparation.



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Bilateral Agreement with Russia

■ Work Program 2007

~ Project 4

Development of a technology and equipment for processing of spent filtering elements of air-purification system (Mos NPO Radon, ICES).



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Bilateral Agreement with Russia

■ Work Program 2007

~ Project 4

- Define the treatment of the produced filtering elements in the existing installation by modifying them or in a new installation.
- Minimize the production of filtering elements at the source through analyse of the different processes from which filtering elements are produced.
- Presentation of a report concerning the two above mentioned items.



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Bilateral Agreement with Russia

■ Work Program 2007

~ Project 4

■ Status

- ~ Visit of the dismantling cell at Radon Mos
- ~ Gathering information about the different types of filters, producers, activities,....
- ~ Discussion about the dismantling technique and equipment in relation with the chemical acceptance criteria of the resulting wastes
- ~ Discussion about standardisation of new filtering elements for the producers



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Bilateral Agreement with Russia

■ Work Program 2007

~ Project 5

Development of equipment for disassembling of radioisotope devices (Mos NPO "Radon").



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Bilateral Agreement with Russia

■ Work Program 2007

~ Project 5

- Define the infrastructure for dismantling the radioactive sources.
- Define the tools for handling the radioactive sources.
- Define the requirements for the package.



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■ Work Program 2007

~ Project 5

■ Status

- ~ Visit of Radon Mos
- ~ Inventory of the different sources
- ~ Discussion about the dismantling techniques and equipment
- ~ Discussion about the management of such sources



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■ Work Program 2007

~ Project 7

Analysis of VLLW management schemes (ICES, VNIIAES).



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■ Work Program 2007

~ Project 7

■ The definition and the general boundary conditions of the VLLW and the EW will be provided.

■ The management schemes of these 2 classes of radwaste will be given in countries where these 2 categories of waste are considered.



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■ Work Program 2007

~ Project 7

■ Status

- ~ Selection of the countries
- ~ Gattering information about definition VLLW and EW
- ~ Draft for two countries with their management scheme and practices
- ~ Counterpart proposal for definition VLLW and EW received
- ~ Adaptation of the existing Web-portal MEZ-Rus



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■ Work Program 2007

~ Project 9

Concrete decontamination and metal cutting (Mos NPO Radon, NIKIET, ICES, SevRAO).



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Bilateral Agreement with Russia

■ Work Program 2007

~ Project 9

- The assessment of present, advanced and perspective technologies and methods for decontamination of concrete.
- The assessment of present, advanced and perspective technologies and methods for metal cutting technologies.
- The assessment of implemented and demonstrated projects concerning the practical application of technologies and techniques with detailed description of technical parameters and the economic data.



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Bilateral Agreement with Russia

■ Work Program 2007

~ Project 9

- Development of decision-making process for choosing the appropriate technologies and techniques for concrete decontamination and metal cutting, with list of applicable boundary conditions .
- Develop of the catalogue of the equipment for concrete decontamination and metal cutting with the technical parameters description.



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■ Work Program 2007

~ Project 9

■ Status

- ~ Concrete decontamination technologies and techniques: 100 % finished
- ~ Metal cutting technologies and techniques: work (collection of data) in progress



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■ Work Program 2007

~ Project 10

Follow-up of the delivery of a chemical control system of gas emissions during HT incinerator operation for radwaste for the RADON site of Sergiev Posad.



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Bilateral Agreement with Russia

■ Work Program 2007

~ Project 10

- Scope of work discussion and finalisation: choice for a solution based on the conclusions of the technical note prepared in 2006.
- Preparation of the technical specifications, risk analysis, calls for tenders, ordering propositions, follow-up of fabrication and shop tests for the chosen material.



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Bilateral Agreement with Russia

■ Work Program 2007

~ Project 10

■ Status

- ~ BA report of WP 2006 propose four options. A choice between those options is to be made by Radon.
- ~ Meeting to determine this choice foreseen end september 2007.
- ~ Technical specifications: will start in october 2007.



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Bilateral Agreement with Russia

■ Work Program 2007

~ Project 11

Development of a repository concept for LLW and MLW in the Northwestern area of Russia.



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Bilateral Agreement with Russia

■ Work Program 2007

~ Project 11

■ The main objective of the collaboration is to develop or adapt existing methodology for site characterisation in relation to safety assessment and construction of the repository for the final disposal of LLW and MLW (surface or geological disposal) to the case of disposal in the Leningrad area.

■ The site characterization includes hydrogeological study of the Leningrad area.



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Bilateral Agreement with Russia

■ Work Program 2007

~ Project 11

■ Status

- ~ Belgian partners have drawn up an advise concerning the site characterisation plan
- ~ LSK RADON drafted a "Technical Assignment" for "Study of engineering-geological and hydrogeological properties of Vendian clays for the purpose of construction of the RW repository on the LSK Radon site"
- ~ the Belgian partners reviewed this document and made some comments and suggestions
- ~ LSK Radon drafted the final "Technical assignment" and placed the order at the company "Energizyskania" and drilling works started 6th of August
- ~ By end of September 3 deep (~130 m) core drillings and borehole measurements will be finished and borehole analysis will start. Core analysis is planned to be finalised 1st semester 2008
- ~ Scientific visit by Belgian experts to LSK Radon to assist in analysis of drilling results is foreseen for end September early October, it is also foreseen that SCK•CEN will perform some analysis on core materials



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Bilateral Agreement with Russia

■ Work Program 2008-2012

- ~ Meeting with Russian counterpart scheduled end of 2007
- ~ Preliminary list of projects established
- ~ Yearly budget ~400.000 EURO



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