



International cooperation

Very important is cooperation with the International Atomic Energy Agency. This cooperation has various forms – national and regional projects of technical cooperation, coordinated research activities, participation of our experts in preparation of the IAEA documentation etc.

One of the technical cooperation projects was project entitled “Remotely Operated and Robotic Technologies for Decontamination and Decommissioning of the A1 NPP” implemented from 2001 to 2006 under marking SLR/4/008. The main goal of the project was to decrease personnel radiation exposure by better preparation of decommissioning procedures. New specific modern technical equipment was delivered to VUJE by the IAEA. Simulation and 3D modelling software packages were used for the decommissioning data processing and new 3D laser scanner was applied for creation of as-built documentation. The long-term cooperation with abroad partners was established within the Project and from the viewpoint of achieved results it is one of the most successful IAEA technical cooperation projects.

Other national technical cooperation project entitled “Management of historical RAW from the A1 NPP decommissioning” is being planned for 2007-2011. The goal of the project is to improve technical capability and theoretical and practical knowledge and skills of personnel in this field. Solution of the project will be based on recommendations of the IAEA experts.

Regional technical cooperation project entitled “Support in Planning the Decommissioning of Nuclear Power Plants and Research Reactors” is being implemented from 2007 to 2011. About nine countries from Eastern and Central Europe participated in the project (for the NPPs part) and Slovakia plays role of LCC (Leading Country Coordinator). Slovakia will be also the recipient of services and the provider of expert’s support. On the basis of suggestion of Nuclear Regulatory Authority of the Slovak Republic VUJE, Inc. is a coordinator of the Project.

Within 6th framework programme of European commission an integrated project EURANOS – EUROpean Approach to Nuclear and radiOLOGical emergency management and rehabilitation Strategies is solved (coordinator is FZK, Germany). VUJE participated also in the project SARNET – NETwork of excellence federating European research on core meltdown reactor accidents. This project is focused on continuation of development of the computer code ASTEC for severe accidents with active core melting, behaviour of containment and of iodine during severe accidents and determination of the source term (coordinator IRSN, France).

Within the international project SPARTACUS financed by EC and Ministry of Economy of SR (5th Framework Programme), in which VUJE was a national leader, spatially distributed models using geographical information system (GIS), basis for physical modelling of water erosion of soil and interactions of radionuclides between water of particles of soil were elaborated. The model was tried out within drainage-basin area of National RAW Disposal Facility in Mochovce.

Further international activities of the Division departments are as follows:

Cooperation on coordinated research project of the IAEA "Improvement of Long term Safety Assessment Methodologies for Near Surface Disposal Facilities" and on elaboration of document ISAM.

Cooperation on new coordinated research project of the IAEA "Planning, Management and Organizational Aspects in Decommissioning of Nuclear Facilities".

Cooperation on regional project of the IAEA entitled RER/9/067 "Application of Safety Assessment Methodologies for Near-surface Waste Disposal" and on elaboration of the IAEA document – ASAM.

Solution of the IAEA project "Transfer of Knowledge and Experience with Emergency Classification System (ECS) at NPPs with WWER-440 and WWER-1000 Reactors" for ENERGOATOM and Ukrainian NPPs.

Solution of the IAEA project "Kozloduy NPP Incinerator Preliminary Safety Report – Dose assessment for working personnel of incinerator and storeroom (containers, liquid waste)".

Cooperation with JRC Ispra (Italy) on ENSEMBLE project – comparison of models of spreading of radioactivity in atmosphere on medium and long distances, participation in comparison exercises, exchange of data on national and international level.

Cooperation with JRC Petten (The Netherlands) on development and validation of the computer code ASTEC.

Cooperation with IRSN Saint Paul les Durance – calculations with the code SOPHAEROS as a support of the experiment PHOEBUS FPT3.

Participation in activities of WPNEM (Working Party on Nuclear Emergency Matters), which cooperates on the elaboration of documents NEA/OECD related to emergency management and documents in the field of management of recovery of territory contaminated during accidents with leakage of radioactivity and measures in the food production.

Participation on activities of RUG (RODOS Users Group) focused on further development of the system RODOS.

Participation on activities of HUG (Handbook Users Group) within EURANOS project, which is focused on further development of handbooks in the field of management of recovery of contaminated territory after accidents.

Projects of technical cooperation with the IAEA

National project of technical cooperation SLR/4/008

VUJE proposed to the IAEA new concept of technical cooperation project focused on using of remote handling technologies for decommissioning. Technical cooperation project SLR/4/008 "Remotely Operated and Robotic Technologies for Decontamination and Decommissioning of A1 NPP" was approved for 2001-2002 periods and its duration was extended up to 2006. The main goals of project were as follows:

- To upgrade national capability with specific state-of-the-art technologies for decontamination and decommissioning
- To develop, test, adapt and apply CA robotic, remote handling and viewing systems for D&D of the Bohunice A1 NPP
- To perform CA simulations, 3D acquisitions and 3D modelling
- To reduce personnel radiation exposure and environmental impact during D&D work thanks to the better preparation of work procedures, CA simulations, acquisition of as-built data, creation of as-built models of equipment, etc.

Following technologies were delivered to VUJE thanks to the SLR/4/008 project:

- Simulation software IGRIP (Interactive Graphics Robotic Instruction Program)
- 3D laser scanner Callidus
- Software for ALARA planning – Visiplan
- Partial improvement of gamma camera Aladin
- Other computer components and accessories.

Significant was also support of human resources development by arrangement of technical visits of our experts abroad and visit of foreign experts in Slovakia. Long-term cooperation with EDF, CEA (Marcoule, France) a SCK.CEN (Belgium) was established.

Project SLR/4/008 was evaluated by the IAEA as one of the most successful technical cooperation projects from the viewpoint of achieved results and high implementation rate (almost 100 %).

National project of technical cooperation SLR/3/002

National technical cooperation project entitled "Management of historical RAW from the A1 NPP decommissioning" was approved by the IAEA for planning period 2007-2008. The goal of the project is to improve technical capability and theoretical and practical knowledge and skills of personnel in this field. Company JAVYS is also involved in the Project. Solution of the project started with the visit of the IAEA external experts in VUJE and JAVYS in May 2007 and is going to continue on the basis on their recommendations. VUJE prepared proposal for extension of the project for planning period 2009-2011.

Regional technical cooperation project RER/3/005

Regional technical cooperation project entitled "Support in Planning the Decommissioning of Nuclear Power Plants and Research Reactors" has been implemented from 2007. About nine countries from Eastern and Central Europe participate in the project (for the NPPs part) and Slovakia plays role of LCC (Leading Country Coordinator).

Slovakia will be also recipient of services and provider of expert's support. On the basis of suggestion of Nuclear Regulatory Authority of the Slovak Republic the coordinator of the Project is VUJE, Inc. Proposal for extension of the project for planning period 2009-2011 was prepared by VUJE.