TTP TITLE: Central and Eastern European Activities
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Summary

The Florida State University/Technical University of Budapest environmental research center, Center for Hungarian/American Environmental Research, Studies and Exchanges (CHAERSE), provides a resource base for information and technologies that is used to address near- and long-term environmental problems within the Department of Energy (DOE) complex and in Central and Eastern Europe. The CHAERSE is used as a technology transfer conduit for environmental restoration and waste management (ER/WM) problems and solutions.

The International Technology Exchange Division (ITED) used the CHAERSE as one source of information for the identification of international ER/WM technologies being developed in Central and Eastern Europe. This was accomplished by matching high-priority problems in that region to high-priority problems in the DOE Complex; conducting symposia, meetings and workshops with international environmental experts; and identifying innovative technologies.

Activities

Budapest '92 Symposium

Proceedings containing over 300 manuscripts of technology presentations from Budapest '92 were prepared and distributed. The topics addressed include: analytical methods; control technologies for air and water pollutants; environmental quality studies; field screening and remote sensing methods; modeling and computer applications; programmatic and legal issues; radiological contamination/radon issues; regional and international networks; clearinghouses and cooperative efforts; risk assessment, risk management and human health issues; sampling and monitoring methods; site characterization methods; site remediation methods; solid and hazardous waste management; and treatment technologies. There were also two special tracks related to the NATO/CCMS International Pilot Study on Evaluation of Demonstrated and Emerging Environmental Technologies for the Treatment and Cleanup of Contaminated Land and Groundwater and the U.S. EPA's Superfund Innovative Technology Evaluation (SITE) Program.

High-Priority ER/WM Problems and Technologies in Central and Eastern Europe

A methodology was developed to identify countries with the greatest promise of assistance to ITED. The rankings reflected innovative ER/WM technologies that could be imported to the U.S. and assist DOE in the remediation of sites within the Complex. They also reflect export opportunities for the U.S. environmental industry. Based on this ranking, the Czech and Slovak Republics were selected as Central and Eastern European countries where initial resources would be allocated during FY93.

Trips to the Czech and Slovak Republics were made to meet with environmental scientists and experts during May 23-29, 1993. A series of meetings were held to focus discussion on technologies that address specific DOE needs, nuclear fuel cycle or weapons production problems, or the development and application of advanced sensors for environmental monitoring. As a result, four technologies were designated as candidates for further evaluation and possible use within the DOE Complex. Three of these technologies involve radioactive and/or chemical waste management and the last is an advanced leak detection technology. These four technologies are described in Appendix I.

Communication Node for the EnviroTRADE Information System

A viable and strategically-located communications node for the EnviroTRADE System is the Technical University of Budapest located in Budapest, Hungary. The Technical University of Budapest is the largest university in Hungary and is involved with the development and support of environmental research initiatives that are related to ER/WM and the use of innovative ER/WM technologies. Working cooperatively with the Regional Environmental Center for Central and Eastern Europe, also located in Budapest, the Technical University of Budapest has conducted environmental research in Hungary for more than ten years. The Technical University of Budapest, through the joint Technical University of Budapest/Florida State University CHAERSE, works cooperatively with faculty at Florida State on ER/WM topics.

Access to the EnviroTRADE System would assist users in learning about environmental technologies available throughout the world, and can also be used to address specific environmental problems. Users of the system would be able to identify and evaluate ER/WM technologies for site-specific application. EnviroTRADE can provide information on international ER/WM organizations, contaminated sites, on-going ER/WM activities, and contacts that could be used to solve the problems of contaminated sites.

The CHAERSE is a base used for conducting cooperative research, technology transfer, and educational activities. It uses the facilities of the Technical University of Budapest and Florida State University in conjunction with other appropriate institutions and international organizations in Central and Eastern Europe. This joint center provides an excellent foundation for establishing an EnviroTRADE node. The use of the CHAERSE at the Technical University of Budapest as a node for EnviroTRADE would be effective for disseminating ER/WM information and for expanding use of the system. One strength of the CHAERSE is the joint nature of its administration, research capabilities, and access to facilities and related equipment through Florida State and the Technical University of Budapest.

Budapest '94 Symposium

A detailed planning document and work plan was developed describing the technical efforts and approach associated with the Budapest '94 Symposium. This symposium will provide significant benefits to the U.S. environmental industry by improving the nation's overall competitiveness through the expansion of market opportunities for U.S. firms. Many U.S. business opportunities in Central and Eastern Europe are lost to environmental firms in Western Europe. As these markets expand, it will be important for U.S. firms to be able to compete more effectively in Central and Eastern Europe.

The structure of the 1994 symposium will expand the role of U.S. exhibitors involved with innovative and emerging environmental technologies, including organizations involved with the development of these technologies. Goals of the Budapest '94 Symposium include expanding participation and increasing the number of innovative technology-oriented exhibitors and poster presentations.

NATO/CCMS International Pilot Study

On September 12-17, 1993, the 1993 annual meeting of the NATO/CCMS Pilot Study on Evaluation of Demonstrated and Emerging Technologies for the Treatment and Clean-up of Contaminated Land and Groundwater (Phase II) was conducted in Québec City, Canada. Canada arranged for many of the technical and cultural activities associated with this week-long meeting of ER/WM international experts. The logistical and organizational activities associated with the 1993 NATO/CCMS meeting were conducted by the CHAERSE at Florida State University. A total of 50 ER/WM experts from 13 countries attended and participated in the meeting, including Gerald Westerbeck (DOE EM-40) and Eric Lightner (DOE EM-50).

Accomplishments

- Published findings and results of 1992 International Symposium on Environmental Contamination in Central and Eastern Europe.

- Evaluated high-priority ER/WM problems and technologies in Central and Eastern Europe.

- Evaluated Technical University of Budapest as a communication node for the EnviroTRADE information system.

- Planned 1994 International Symposium on Environmental Contamination in Central and Eastern Europe.

- Reported on NATO/CCMS International Pilot Study on Evaluation of Demonstrated and Emerging ER/WM Technologies for the Treatment and Clean-up of Contaminated Land and Groundwater.

EM Cooperative Efforts

The table presented on the next page illustrates a correlation between the four Czech technologies discussed and the DOE sites that are expected to benefit through the application of these technologies. The results of the DOE Grand Junction Projects Office Crosswalk Program will continue to be utilized to identify environmental problem units.

Joint Participants

Florida State University, Tallahassee, Florida.
Technical University of Budapest

Central and Eastern European Activities (AL-234301)

Potential Applications of Foreign Technologies to Environmental Problem Units in DOE Operations

Foreign Technology	Albuquerque (AL)			Chicago (CH)			FN	ID	NV	Oak Ridge			RF	RL	SF		SR
	LANL	SNL	Other	ANL	BNL	BCL	FEMP	INEL	NTS	ORNL	K-25/ Y-12	Other	RFO	RLO	LLNL	ETEC	SRO
1. SENSOR® Leak Detection Technology	√						√	√	√		√	√					√
2. Composite Ion-Exchangers for Treatment of Liquid Radioactive Waste					√	√	√		√	√							
3. The Chrompik Vitrification Process for Dried Liquid Radioactive Waste					√	√	√		√	√							
4. Vitrification of Liquid Wastes from Nuclear Power Stations					√		√	√				√					