



ΕΒΡΟΠΕΪΣΚΙ ΠΑΡΛΑΜΕΝΤ ΠΑΡΛΑΜΕΝΤΟ ΕΥΡΟΠΕΟ ΕΥΡΟΠΣΚΪ ΠΑΡΛΑΜΕΝΤ ΕΥΡΟΠΑ-ΠΑΡΛΑΜΕΝΤΕΤ
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PUBLIC HEARING

COMMITTEE ON INDUSTRY, RESEARCH AND ENERGY

MANAGEMENT OF RADIOACTIVE WASTE



CHAired BY HERBERT REUL

CHAIR OF THE COMMITTEE ON INDUSTRY, RESEARCH AND ENERGY

**European Parliament,
Room JAN 4Q1, Brussels
1 December 2010, 9h00 - 12h30**



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COMMITTEE ON INDUSTRY, RESEARCH AND ENERGY

PUBLIC HEARING

on the

"Management of spent fuel and radioactive waste"

Chaired by

Herbert Reul

Chair of the Committee on Industry, Research and Energy

European Parliament,

Room: JAN 4Q1

Brussels, 1 December 2010, 9.00 - 12.30

09:00 *Opening:* **Herbert REUL**, Chair

09:10 *First panel*
Radioactive waste management - state of play

International approach to the management of nuclear waste and coordinated activities:

Mr Hans Riotte,
Head of the Radiation Protection and Radioactive
Waste Management Division at the OECD-Nuclear
Energy Agency

*Progress and prospects of research on the management of high-level radioactive waste:
the example of the 'transmutation' option:*

Univ.-Prof. Dr. rer. nat. Bruno Thomauske,
Head of the Department of Nuclear Fuel Cycle
(INBK) of the RWTH Aachen Sciences University

Considerations on deep geological disposal:

Dr. Detlef Appel,
PanGeo, Geoscientific Bureau

Discussion: *Questions and Answers*

10:45 *Second panel*
Strategies for high-level radioactive waste management

The final disposal of spent nuclear fuel:

Mr Eero Patrakka, Finland
former CEO of Posiva, expert organisation
responsible for the final disposal of spent nuclear
fuel of the owners

Considerations on nuclear waste management in Sweden:

Dr. Johan Swahn,
Director of the Swedish NGO Office for Nuclear
Waste Review (MKG)

The recycling (closed fuel cycle) example:

Mr Denis Hugelmann,
Back-End Business Group Senior executive Vice-
President, AREVA

Discussion: *Questions and Answers*

12:25 *Conclusion:* **Herbert REUL**, Chair

Hans RIOTTE

Hans G. Riotte is Head of the Radiation Protection and Radioactive Waste Management Division at the OECD Nuclear Energy Agency (NEA) in Paris.

Mr Riotte, who holds a PhD in nuclear physics, started his career with the German TSO, the *Gesellschaft für Anlagen- und Reaktorsicherheit (GRS)*.

In 1989 he joined the German Federal Ministry of Research and Technology, where he was responsible for a large research and development programme on the direct disposal of spent nuclear fuel.

Before joining the NEA in 1998, he spent four years with the planning and research policy unit of the Federal Minister for Research and Higher Education.

Univ.-Prof. Dr. rer. nat. Bruno THOMASUSKE

Bruno Thomauske, born in 1949, studied physics and made his PhD at the University of Freiburg/Germany. After a research internship at the European Nuclear Research Center (CERN) in Geneva in high energy physics he worked from 1983 till 2003 in the German Radiation Protection Ordinance as head of the department „Nuclear Waste Management and Transports“. He was responsible for the German final disposal projects and plants Gorleben, Konrad and Morsleben as well as for the licensing of interim storage facilities and of transports of fuel elements and spent fuel.



In September 2003 he moved to the energy supplier Vattenfall Europe where he was the managing director of the Vattenfall Europe Nuclear Energy GmbH. He was responsible for the operation of Vattenfalls German nuclear power plants Krümmel and Brunsbüttel and as a shareholder for the nuclear power plants Brokdorf and Stade till 2007.

Since 2008 Bruno Thomauske has a chair in the Aachen University for the Nuclear Fuel Cycle that means from uranium mining, operation of nuclear power plants, interim storage of spent fuel till final disposal of nuclear waste. Based on a cooperation agreement between the Aachen University and the Jülich Research Center, he is also Director in the Jülich Research Center.

Bruno Thomauske is also working as a consultant for business development. Bruno Thomauske is member of the board of the Federal Institute for Geosciences and Natural Resources, Hannover, Germany and member of the board of the German Atomic Forum.

Dr. Detlef APPEL

Dr. Detlef Appel, geologist, PanGeo - Geowissenschaftliches Büro, Hannover, Germany

Freelancing expert in applied geology, with emphasis on environmental impact assessment, groundwater and soil protection and the selection and assessment of sites for final disposal of "conventional" and radioactive waste.

Actual scientific interest aimed at (technical and societal) "robust" strategies for radioactive waste management, methodology of decision making and criteria for site selection and assessment.

Consultant and advisor to political parties, NGOs, communities, states' and federal ministries regarding methodological and geological aspects of final disposal of "conventional" and radioactive wastes.

Eero PATRAKKA

Mr Eero Patrakka, born in 1946, received his M.Sc. (Eng.) degree from the technical physics department of Helsinki University of Technology in 1971 and Lic.Tec. degree from the same department in 1977.

Mr Patrakka worked as research scientist at the Technical Research Centre of Finland (VTT) until 1974 when he entered Teollisuuden Voima Oy (TVO). In TVO he kept a variety of positions in the fields of nuclear fuel procurement, training and research & development.

Mr Patrakka participated in the Olkiluoto 3 purchase project in 2002-2003 and was responsible for bid assessment. In 2004 he was appointed as senior vice president, nuclear engineering in TVO.

During 2005-2009 Mr Patrakka was the president of Posiva Oy, a joint undertaking of the Finnish NPP operators, TVO and Fortum taking care of the final disposal of spent nuclear fuel.

After his retirement Mr Patrakka is working as an adviser providing consultation services, mainly to TVO and Posiva. His external positions include the vice-president and president posts of the Finnish Nuclear Society (ATS) in 1992-1996, the chairmanship of the Technical Working Group on Advanced Technologies for Light Water Reactors in IAEA in 2001-2005 and the chairmanship of the Working Group Nuclear in EURELECTRIC in 2002-2008.

At present he is active in the European Nuclear Energy Forum acting as chairman of Sub Working Group Waste Management.

Dr. Johan SWAHN

Dr. Johan Swahn is the Director of the Swedish NGO Office for Nuclear Waste Review, MKG. He leads the organisation's work within the formal environmental consultation process for a Swedish repository for spent nuclear fuel.

Dr. Swahn has a Master of Science in Engineering Physics and a doctorate degree in Science, Technology and Global Security from the Chalmers University of Technology, Göteborg Sweden. His doctorate and post-doc work focused on the issues of nuclear non-proliferation, nuclear waste and military fissile material disposition.

Before his present position, Dr. Swahn worked as a researcher and lecturer in the fields of energy, environment and global security at the Department of Physical Resource Theory at the Chalmers University of Technology, Göteborg, Sweden.

Denis HUGELMANN

Denis Hugelmann, born October 20, 1958, graduated in engineering from the *Ecole Centrale Paris*.

He began his career in 1983 in French Atomic Energy and Alternative Energies Commission (CEA), working on the Valduc site.

In 1986 he moved to Cogema's used nuclear fuel recycling plant in La Hague on the Cotentin peninsula, where he occupied a number of operational positions before being given responsibility for starting up the facilities in the UP3 plant.

He was successively appointed Director of the UP3 plant, which picked up speed rapidly, Technical Director of the La Hague site, Director of the UP2 plant, with the aim of doubling capacity, and finally, in 1996, Assistant Plant Director.

In 1998, he was appointed Director of the Melox plutonium fuel fabrication plant in the south of France, responsible for increasing its capacity. This plant is the only one of its kind in the world.

In 2000, Denis Hugelmann moved to steelmaker Arcelor in Dunkirk, as Director of its carbon flat steel activities. He was then appointed Director of Arcelor Packaging International.

In 2006, he joined AREVA at the head of the Recycling BU, and since 2008 has been Senior Executive Vice President of one of the four Business Groups at AREVA, the Back End Business Group. It covers all the activities at the back end of the nuclear fuel cycle: used nuclear fuel recycling, transportation of nuclear materials, and clean-up and dismantling of disused facilities.

Denis Hugelmann is renowned as a world expert in used nuclear fuel recycling, particularly in Japan, Great Britain and the United States.