The Swedish National Council for Nuclear Waste

The Future of Nuclear Waste – Burden or benefit?

An invitation to an international seminar arranged by the Swedish National Council for Nuclear Waste

Stockholm, November 8–9, 2012

Näringslivets hus, Storgatan 19, 114 85 Stockholm

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Backgrund

The Swedish National Council for Nuclear Waste is an advisory body to the government on the management of nuclear waste and spent fuel. As a part of this assignment the Council observes the development within the nuclear waste sector, both within Sweden as well as internationally.

The prevailing proposals for management of radioactive waste are final disposal in geological repositories. In Sweden, Swedish Nuclear Fuel and Waste Management Company (SKB) has submitted an application on building a final repository for spent nuclear fuel in Östhammar, that is currently being reviewed by the Swedish Radiation Safety Authority and the Environmental Court.

These proposals have been challenged by other proposals suggesting alternative methods for nuclear waste management. In an earlier seminar arranged by the council, deep boreholes have be highlighted. The present seminar will focus upon the emergence of new reactor technologies using nuclear waste as a resource and the shortening of the lifetime of nuclear waste through partitioning and transmutation.

Objectives

The aim of the seminar is to explore and present different alternatives regarding the management of nuclear waste and spent nuclear fuel in the light of new technologies and development. The seminar will provide an opportunity for an analysis of the implications of new technologies for radioactive waste management by addressing the fundamental question: Is nuclear waste a burden or resource for future generations?

This question encompasses ethical, technical, social and scientific aspects. The answer has significant consequences for radioactive waste management and deposition of nuclear waste.

Key questions

The seminar will provide an opportunity—through presentations by highly merited speakers, panel discussions and open dialogue with the audience—to explore the following key questions:

- Future nuclear technologies in societal context. What are the prospects for significant future development concerning new reactor technologies? What potential do new techniques hold for the management of nuclear waste and what are the limitations and risks? Under which future scenarios may these be developed?
- Implications for current proposals for geological repositories. What would be the implication of the development of new reactors for existing and currently developed proposals for geological repositories (e.g. the KBS-3 method)?
- International perspectives. What are the specific national approaches to nuclear waste management in the view of new technologies?
- Intergenerational justice and equity. What are the implications of transmutation and recycling of nuclear waste for the principles of intergenerational justice and equity? What brings the greatest benefit and the least burden to future generations?
- The implications for uranium mining. How does development of new techniques affect uranium mining and what would be the implications, not only in technical, but also social and political terms?

Outcome of the Seminar

It is not purpose of the seminar to reach a final verdict on the future development of nuclear power. It is, nevertheless, of importance to view nuclear waste management in the light of different scenarios of technological development. There is no general agreement on the desirability of these scenario – and nor is such an agreement to be expected after the seminar. Still, it is of importance to analyze the possibilities, clarify our choices and explore their implications.

In this spirit we invite all concerned with nuclear waste management to participate in this seminar and engage in an open dialogue. See link to our website below for registration. The last day for registration is the 1th of November.

On behalf of the seminar committee,

Carl Reinhold Bråkenhielm
vice chairman of the
Swedish National Council for
Nuclear Waste

Holmfridur Bjarnadottir
administrative director,
Swedish National Council for
Nuclear Waste

Link to our website for registration:
http://www.karnavfallsradet.se/en/hearings-and-seminars

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International seminar: Nuclear Waste—Burden or benefit?

Venue: Näringslivets hus, Storgatan 19, 114 85 Stockholm

Thursday 8th November 2012

Chair: *Thomas Kaiserfeld*, Swedish National Council for Nuclear Waste
Professor of history of ideas and sciences at Lund University

08.30 Registration

09.00 Welcome
Torsten Carlsson, Chairman of the Swedish National Council for Nuclear Waste

09.20 Spent fuel—waste or resource? A perspective from the IAEA
Magnus Vesterlind, Section Head, Waste and Environmental Safety, International Atomic Energy Agency (IAEA)

10.00–10.20 Coffee

PART 1 REACTOR TECHNOLOGY IN THE LIGHT OF INTERGENERATIONAL JUSTICE

10.20 New reactor technology. The current status of research
Janne Wallenius, Professor in reactor physics, KTH

11.00 Intergenerational justice and its policy implications for nuclear waste management
Behnam Taebi, Assistant professor of philosophy at Delft University of Technology

11.40 Discussion

12.00–13.00 Lunch

PART 2 GLOBAL PERSPECTIVES AND NATIONAL OUTLOOKS

Chair: *Maja Fjæstad*, Assistant professor, Division of History of Science and Technology, Royal Institute of Technology

13.00 The NUWASTE project
Gene Rowe, U.S. Nuclear Waste Technical Review Board

13.40 Japan's prospects of spent fuel recycle and disposal after Fukushima
Shigeo Nomura, Executive Director of JAEA, President of AESJ

14.20–14.40 Coffee

14.40 Why recycling the actinides is a key step towards sustainability?
Christophe Poinssot, Head of RadioChemistry & Processes Department Professor at the National Institute for Nuclear Science & Technology, France

15.20 Uranium from Africa and the Power of Nuclear Things
Gabrielle Hecht, Professor, Department of History, University of Michigan

16.00 Panel discussion

17.00 End of the day

Friday 9th November 2012

PART 3 NUCLEAR WASTE IN THE LIGHT OF NEW TECHNOLOGY

Chair: *Daniel Metlay*, U.S. Nuclear Waste Technical Review Board

09.00 Recycling of nuclear waste—A matter of technology only?
Ane Håkansson, Professor in Applied Nuclear Physics, Uppsala University

09.40 Nuclear power as a solution to climate change? Potential consequences of global up-scaling
Fredrik Hedenus, Chalmers University of Technology

10.20–10.40 Coffee

10.40 Why Fuel Cycle Choices Will Vary With Time
Charles W Forsberg, Executive Director, MIT Nuclear Fuel Cycle Project

11.20 Panel discussion

12.00 Reflections—what has been heard?
Hannu Hänninen, Professor at Helsinki University of Technology and
Lars Löfquist, Department of Theology, Uppsala University

12.30 Closing of the conference
Carl Reinhold Bråkenhielm, Swedish National Council for Nuclear Waste Professor Emeritus of Worldview Studies at Uppsala University and Senior Professor of Ersta Sköndal University College in Stockholm

12.45 Lunch

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