

Invitation to a scientific workshop on **Mechanisms of Copper Corrosion in Aqueous Environments**

The Swedish National Council for Nuclear Waste would like to invite you to a workshop on the Mechanisms of Copper Corrosion in Aqueous Environments. The workshop will be held in Stockholm on November 16, 2009.

The copper canister plays a key role in the design of the repository for spent nuclear fuel in Sweden. The long-term physical and chemical stability of copper in aqueous environments is fundamental for the safety evolution of the intended disposal concept. Recently the corrosion resistance of copper has been questioned by results obtained under anoxic conditions in aqueous solution. These observations have caused some head-lines in the Swedish newspapers as well as public and political concerns and consequently the National Council for Nuclear Waste has found it appropriate to organise a scientific workshop on the issue.

The purpose of the workshop is to address the fundamental understanding of the corrosion characteristics of copper regarding oxygen-free environments, and to identify what additional information is needed to assess the validity of the proposed corrosion mechanism and its implication on the containment of spent nuclear fuel in a copper canister. The goal is to discuss these issues in a scientific setting.

All presentations and discussions will be in English.

The workshop is hosted by the Swedish National Council for Nuclear Waste and organized jointly by the Swedish National Council for Nuclear Waste, the Swedish Radiation Safety Authority, the Royal Institute of Technology and the Swedish Nuclear Fuel and Waste Management Co.

You are most welcome to participate in this workshop, in which case you should complete the attached registration form and return it to karnavfallsradet@environment.ministry.se by **October 16, 2009** at the latest. The venue for the workshop is Näringslivets hus, Storgatan 19, metro station Östermalmstorg. The workshop is free of charge.

Preliminary programme

09.00 Welcome

Torsten Carlsson, The Swedish National Council for Nuclear Waste

Knowledge building

09.10 Questions, hypotheses and facts related to copper corrosion in water

Gunnar Hultqvist, The Royal Institute of Technology

Copper corrosion processes in the Cu-O-H system, and their role in long-term safety assessments

Christina Lilja, The Swedish Nuclear Fuel and Waste Management Co

10.00 Coffee

10.30 Thermodynamics and kinetics of copper corrosion in oxygen free water

Peter Szakálos, The Royal Institute of Technology

Olle Grinder, PM Technology AB

Thermodynamic properties of Cu-O-H phases from first principles calculations

Pavel Korzhavyi, The Royal Institute of Technology

11.20 Introductory talks by the panel members

12.40 Lunch

Hearing and panel discussion

13.40 Topic 1: Fundamental understanding of the corrosion characteristics of copper regarding oxygen-free environments.

14.40 Topic 2: What additional information is needed to confirm this specific corrosion process and to assess the importance of the process for the final repository?

15.40 Concluding remarks by the panel members

16.30 End of the day

For more information:

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