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DPG

## **Scientific Evening Talk**

**Monday, July 8, 2013, 18:30 h**

Magnus-Haus Berlin, Am Kupfergraben 7, 10117 Berlin

***Nuclear waste storage;  
The Swedish Solution***

***Prof. Dr. Ulf Karlsson***  
*Materials Science Platform*  
*KTH Stockholm*

The discussion will be chaired by  
Prof. Dr. Wolfgang Eberhardt  
*Scientific Director Magnus-Haus, Berlin*

‘Nachsitzung’ with food and drinks in the ‘Remise’; sponsored by the WE-Heraeus-Foundation; Please register online

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**Ulf Karlsson** was born 1952 in Ludvika, Sweden. Ulf Karlsson is full professor in materials physics at the Royal Institute of Technology (KTH) since 1997 and the director of KTH Materials Platform since 2010. Professor Karlsson is the chair of Röntgen-Ångström collaboration with Germany, and is or has been member of several national or European boards and evaluation groups relating especially to research infrastructures and materials science.

### **Abstract:**

The used nuclear fuel must be isolated from people and nature for about 100,000 years. Due to Sweden’s geographical location on the planet the final storage must also be able to endure new ice ages and the pressure of several kilometers of ice.

The proposed solution is to store the waste at a depth of around 500 meters and to use copper canisters and with a bentonite buffer layer to protect the canister against corrosive attack and rock movements. A significant part of the research on the final repository for spent nuclear fuel is done at underground hard rock laboratory on the island of Äspö. The laboratory, gives scientists a possibility to carry out full field tests in a real environment on a full scale of water flow, rock mechanics and material corrosion down to a depth of 500 meters. This research has not only been of value for the nuclear industry but also provided new and important knowledge about the ground water in the Baltic region and has also given us new models for fresh water flow, which are now applied to other regions of the planet. In this talk I will review some of the scientific, technical and legal procedures leading up to the proposed solution.

Hauptgeschäftsführer  
Dr. Bernhard Nunner

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