



A SCOOP IN TUNNELLING IN MOL

In December 2000, the Economic Interest Grouping (EIG) EURIDICE was created in Mol, Belgium. EURIDICE – which stands for European Underground Research Infrastructure for Disposal of nuclear waste In Clay Environment – was in fact set up back in 1995 under the name EIG PRACLAY as a joint venture between ONDRAF/NIRAS and the SCK·CEN. This joint venture was created to bring together the knowledge and experience of both organizations in research and development on the possibility of disposal of radioactive waste in clay layers, and thus to optimize the coordination at the technical, scientific and financial level and at the level of human resources.

The EIG EURIDICE is based in Mol, Boeretang 200, on a site for which the SCK·CEN granted a right of building to the EIG.

The main tasks of the company are:

- to contribute to the feasibility studies on disposal of radioactive waste in clay layers;
- to manage and operate the underground laboratory HADES;
- to extend the HADES underground laboratory;
- to carry out the PRACLAY experiment, which should make an important contribution to research on the feasibility of geological disposal in clay;
- to open up the underground laboratory to international collaborative ventures;



Picture 1: a picture of the underground labo as he will look like after the extension work

At the moment the extension work on the HADES Underground Research Facility (URF) is well under way. Construction of the second access shaft (on the left in the picture) was completed at the end of 1999 and the connecting gallery, which will link up the second shaft with the existing underground laboratory, is currently being excavated at a depth of 225 metres. This gallery will have a total length of about 80 metres. The construction of the connecting gallery - that is being carried out by the temporary association ACM, of which the firm Smet Tunneling is the pilot and spokesperson - receives much attention both on a national and international level. It is indeed the first time that a gallery will be dug in clay at a depth of 225 metres using an industrial technique, which is in itself an experiment. The technique that will be used for executing the connecting gallery is the "Wedge Block System", a technique that was also used for building the London underground. The advantage of using this technique in comparison with other tunnelling techniques, is that it will cause a minimal disturbance of the clay massif. To apply the "Wedge Block System", the



"immediate convergence" - the reduction of the size of the excavated diameter under the pressure of the clay massif - of the clay massif must be known quite precisely. This is the experimental aspect of the execution of the connecting gallery, because the "immediate convergence" is not known as up to now digging in clay was never done in a rather fast and industrial manner. The EIG EURIDICE has therefore refined the "Wedge Block System". During the execution of the connecting gallery, a lot of complementary information - including on the "immediate convergence" - on the behaviour of the clay massif will be gained.

Picture 2: the Wedge Block System

Once the HADES laboratory has been extended - scheduled for 2003 - the intention is to proceed with national and international research projects in this new part of the laboratory. In this context, there are discussions going on for the moment with the International Atomic Energy Agency (IAEA) to formally recognize the EIG EURIDICE as an international "Centre of Excellence".

One of the most important experiments that will be carried out in the new part of the laboratory is the PRACLAY experiment. The studies are due to start in 2004. It is always possible to visit the EIG EURIDICE with a group. Please contact Mrs Brigitte Pitz at the following number: 014/33.27.84.

ONDRAF/NIRAS stands for :	Belgian Agency for Radioactive Waste and Enriched Fissile Materials
SCK·CEN stands for :	Nuclear Research Centre
EURIDICE stands for :	European Underground Research Infrastructure for Disposal of nuclear waste In Clay Environment