

# Fundamentals of Geological Disposal 2006

Held : 23 October &ndash; 1 November, 2006

Meiringen, Switzerland

Course Programme : PDF file 30 kb  
Course Outline

This is an extended and updated version of our regular &lsquo;Fundamentals&rsquo; course which ranges across all key aspects and topical issues concerned with managing a geological disposal programme (previous &lsquo;Fundamentals&rsquo; courses were held in 2003 and 2004 ). The extended 2006 course includes a two-day practical exercise in the underground Grimsel Test Site.

The 8-day programme for 2006 consists of;

- Lectures on topics ranging from evaluating the wastes to be disposed of, right through all the technical stages of identifying and implementing geological disposal to the societal interactions required of repository development projects. Sufficient time will be allocated for questions and discussions in each presentation module.
- Evening sessions will encourage more active roles for the participants, such as presenting their own perspectives on their national programmes and discussing with tutors and other participants from around the world.
- A 2-day mid-week programme of in-situ , hands- on training and exercises in the GTS (Grimsel Test Site : Nagra&rsquo;s Underground Research Laboratory in granite <http://www.grimsel.com/> ) will enable participants to be learn directly about experiments to demonstrate the feasibility and safety of geological disposal.

The course is ideal for those involved in any component of national programmes. The previous fundamental courses were attended by participants from a wide range of stakeholders in sectors such as national/provincial level decision-making authorities, implementing and regulating organisations, research organisations and universities, including both Member and non-member organisations of the ITC-School.

Course Organiser

The course is organised by the ITC-School in collaboration with, and supported by, the IAEA (International Atomic Energy Agency) within its network on Training and Demonstration of Waste Disposal Technologies in Underground Research Facilities (<http://www-tc.iaea.org/tcweb/default.asp>).

The local host organisation is Nagra (National Cooperative for the Disposal of Radioactive Waste ( [www.nagra.ch](http://www.nagra.ch))).  
Teaching

The course will be held in an informal, workshop atmosphere and participants will be encouraged to interact and question at all times. Each course topic will be taught by highly qualified and internationally recognised specialists from around the world. They will provide the most up to date and comprehensive information and discussions. Course materials will be provided for each topic. Modules will generally be taught in the morning and late afternoon, with an extended lunch and afternoon study break. In addition, there will be evening sessions for free discussion and information exchange. The course language is English and course materials are printed in English.

Participants from IAEA Technical Co-operation Project

The IAEA will finalise arrangements for the INT 9.173 Technical Co-operation Project "Training in Radioactive Waste Disposal Technologies in Underground Research Facilities", of which this course is a part. A draft prospectus will be circulated by IAEA to target countries in the scheme which explains the application procedure and the support arrangements. Participants from the countries within the IAEA training scheme (Argentina, Armenia, Brazil, Bulgaria, Chile, the Peoples Republic of China, Croatia, the Czech Republic, India, Lithuania, Kazakstan, Mexico, Pakistan, Philippines, Republic of Korea, Romania, Republic of South Africa, Romania, Russian Federation, Slovakia, Slovenia, Ukraine) should contact responsible officers at the Agency as below.

Mr. Mykola Kurylchuk Department of Technical Co-operation, ext. 26368 e-mail M.Kurylchuk@iaea.org

Malcolm Gray, Technical Officer, Department of Nuclear Energy, Division of Waste Management and the Fuel Cycle, IAEA for details: Tel. ++ 43 1 2600 21535; e-mail: M.N.Gray@iaea.org

Time

Topic

Presenter

Monday 23rd October

0830 - 0900

Introduction

N Chapman

M Gray

0900 - 1000

The concept of geological disposal

N Chapman

1030 - 1230

Waste types, origins, inventories & properties

M Apted

1230 - 1430

Lunch and study break

1430 - 1600

Geological environments for waste disposal

N Chapman

Evening

1700 - 1900

Presentation & discussion "Participants perspective"

## Participants

Tuesday 24th October

0830 - 1030

Repository design and safety concepts

M Apted

1100 - 1300

Engineering, constructing and operating a repository

A L Nold

1300 - 1430

Lunch

1430 - 1530

Staged repository development programmes

T Isaacs

1545 - 1700

Selecting a repository site

C McCombie

Evening

1800 - 1930

Panel Discussion: structuring a national radioactive waste management programme

T Isaacs (leader)

C McCombie

N Chapman

Wednesday 25th October

0930 - 1200

Site characterisation in crystalline environments

K Ahlbom

1200 - 1330

Lunch

1330 - 1400

Transfer to Grimsel Test Site

1400 - 1430

Introduction to Grimsel Test Site

W Kickmaier /

I Blechschmidt

1430 &ndash; 1630

Visit the ongoing experiments & exercise sites

Introduction to practical exercises (radioprotection issues, drilling mapping)

I Blechschmidt

A Möri

T Baer

W Kickmaier

1630 - 1700

Transfer back to Meiringen

Thursday 26th October

0830 - 0900

Transfer to Grimsel

0900 - 1000

Use of cementitious materials in the geological repositories in Nordic countries

J Hansen

1000 - 1030

Development of cementitious materials for repository applications

M Gray

1030 &ndash; 1100

Coffee break

1100 - 1200

Geology of the GTS

A Möri

1200 &ndash; 1330

Buffet lunch GTS

1330 &ndash; 1400

Introduction to the group exercise

J Skrzyppek

J. Hansen

1400 - 1630

Group work Visit VE test site

J Skrzyppek J Hansen W Kickmaier

I Blechschmidt

1630 &ndash; 1700

Transfer to Meiringen

Evening

1700 &ndash; 1900

Preparation of the Group presentations

All

Friday 27th October

0830 - 0900

Transfer to Grimsel

0900 - 1000

Presentations of the groups

Participants

1000 -1045

Presentation of the ongoing LCS Project &ndash; aims, tasks and solutions

J Skrzyppek

J. Hansen

1045 - 1115

Coffee break

1115 - 1200

Discussion

J Skrzyppek

J. Hansen

1200 &ndash; 1330

Buffet lunch (underground)

1330 &ndash; 1630

- Practical exercise &ndash; Definition of the hydrogeological boundary conditions Tracer tests / Hydrottests / Data interpretation

Solexperts

1630 - 1730

Transfer back to Meiringen

Saturday 28th and Sunday 29th October

WEEKEND BREAK

Monday 30th October

0900 - 1030

Site characterisation in sedimentary environments

T McEwen

1100 - 1200

Site Characterisation in plastic clays: Example of the Boom Clay

M. De Craen

1200 - 1330

Lunch

1330 - 1500

Synthesising site data into a site model for design and PA

S Vomvoris

1530 - 1700

Safety standards and regulations worldwide

J Vigfusson

Tuesday 31st October

0900 - 1230

Objectives and methods of safety assessments: with exercises

J Schneider

1230 - 1400

Lunch

1400 - 1530

Showing it is safe: presenting the evidence

N Chapman

1600 - 1700

Natural Analogues film

Wednesday 1st November

0900-1000

A history of Problems and Setbacks

C McCombie

1000-1100

International case studies on societal issues

C. Pescatore

1130-1230

Stakeholders and governance

M. Martell

1230-1400

Lunch

1400-1500

Geological disposal, past and future

C McCombie

1500-1530

Wrap up and close

N Chapman