

# Expert Group for Nuclear Waste Disposal EGT

-

## Recent activities

### Simon Loew

Chairman

ABG Meeting  
London, 22<sup>th</sup> October 2013



## Constitution and modus operandi



Geoffrey Milnes

- International scientific-technical expert group (Switzerland, Germany, Austria)
- 7 members from research institutions, independent from the implementer
- Financial agreements between individual members and ENSI
- 4 closed meetings per year
- Annual working program established with ENSI
- Public statements and hearings
- Secretariate: ENSI (Safety Inspectorate)



Simon Löw



Rolf Kipfer



Wulf Schubert



Friedemann Wenzel



Annette Johnson



Rainer Helmig



# Sectoral Plan for Swiss Site Selection



Quelle: BFE, Sachplan Konzeptteil April 2008



# Current Status of Sectoral Plan and Key Issues



## Public discussion about proposed surface facilities and locations

- Intensive controversial discussions in 2013 (criteria)
- The implementer will propose surface facility locations (and access tunnels) to be included in the safety analysis in 2014

## The implementer will submit documents about narrowing potential sites and proposed underground and surface sites (2014)

- Assessment by authorities, including EGT
- Heavy workload expected
- Preparation has already started based on detailed technical documents (low level reports)



## From KNE to EGT: Experiences

EGT is widely accepted to have replaced KNE and its role:

- Support and advise the Nuclear Safety Inspectorate (ENSI)
- Evaluate applications for geological site investigations, proposed selection of siting regions, long term safety and engineering feasibility of repository construction
- Participate
  - in the Technical Forum on Safety
  - in technical discussions with the implementer and governmental organisations
  - in Regional Conferences and public hearings



## General Challenges

EGT is expected to contribute to the Sectoral Plan:

- Publish timely technical review reports
- Focus on questions of relevance for upcoming decisions of Stage 2 SGT
- Guarantee independence from the implementer, politics and the public
- Provide expert opinions in a highly dynamic running (stage 2 includes significant public participation)



## Key topics identified for 2012-2014 (1)

### Regional geological and surface processes

- Future geodynamic and neotectonic evolution
- Long term earthquake characteristics and near field impacts
- Radionuclide migration and dilution in the biosphere
- Tectonic framework, fault reactivation and fracturing in Tabular Jura (preferred repository siting region)

### Processes in near field and host rock (clay shales)

- Gas transport processes and induced deformation
- Radionuclide transport mechanisms in clay shales
- Geochemical impacts (H<sub>2</sub>, sulfate reduction etc.)
- Preferential flow paths and self-sealing of faults



## Key topics identified for 2012-2014 (2)

### Technical barriers

- Corrosion mechanisms and gas production rates of steel canisters
- Layout and performance of seals

### Engineering suitability

- Mechanical constitutive equations of Opalinus Clay
- Conceptualization and feasibility of repository layout and access (by shafts and ramps)
- Risk assessment of construction and operation of underground facilities

### Data assessment

- Results from the 2D seismic survey at proposed sites
- Consistency with results from demonstration experiments



## Meeting activities in 2012-2013

- Continuous participation in the Technical Forum on Safety
- Four closed meetings per year → partially opened for technical discussions
- Participation in regular discussions about state of knowledge (with implementer, authorities)
- Homepage: [www.egt-schweiz.ch](http://www.egt-schweiz.ch)



## Scientific Topics Discussed 2012 - 2013

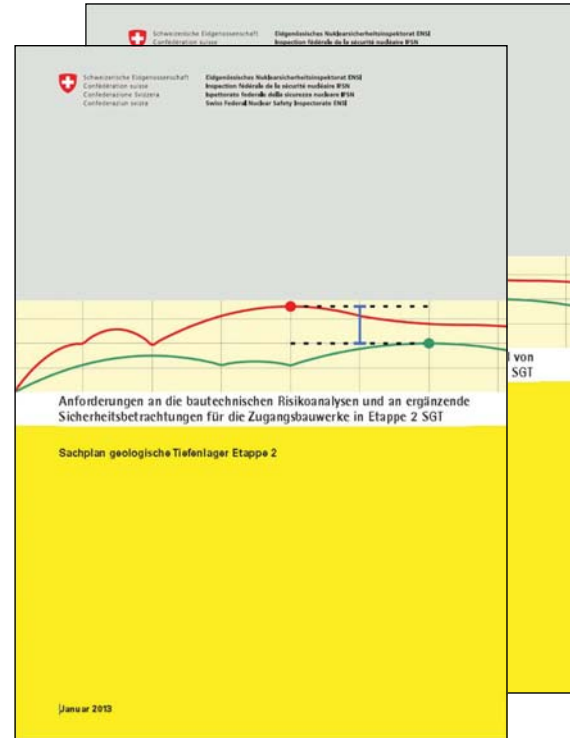
- Conceptual repository design
- 2D seismic surveys (large new datasets)
- Tectonics, neotectonics, seismicity und geodynamic evolution
- Earthquakes in relevant time scales and consequences for deep repositories
- Geochemical processes within the near-field: corrosion, gas generation and salinity
- Gas transport through technical und geological barriers



# Reports 2012 - 2013

## Support and advise to the Nuclear Safety Inspectorate ENSI:

- Development of a methodology for the comparison of proposed sites from a safety perspective (stage 2 of the sectoral plan)
- Formulation of demands on underground construction, including risk analysis of access tunnels and shafts



# Public discussions related to surface facilities and repository access

