Welcome to all participants of Modern2020 Final Conference in Paris

Cité Internationale of Paris (CIUP)

This project has received funding from the Euratom research & training programme 2014-2018 under grant agreement 662177

Modern2020 Final Conference
9-11 April, 2019, Paris - Welcome address
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Monitoring: From Laboratory and URL studies to Deep Geological Disposal

Last 40 years

At that time to next 5/10 years first disposals of SF, HLW, IL-LLW

FinLand

Sweden

France (Cigéo)

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Objectives of Monitoring for a Deep Geological Disposal

• To support the construction and the operational safety

• To support the achievement of the post-closure safety functions during operating period

• To support the assessment of the technical conditions for retrievability

• To contribute to the dialogue with the Public

• “To contribute to the knowledge management”
Monitoring as a set - 1/2

• Strategy/Program
  ✓ Operating and from operating to post closure
    • Safety of Operating processes (incl. retrievability)
      - (May) including incidental situations
    • Behaviour of Post closure system ⇒ Post closure functions
      ⇒ components and relevant THMCR parameters to be monitored
  ✓ Governance and progressive development of the disposal
    • Role of pilot (phase) in many projects
      - Monitoring Strategy/Program: a input and a output
    • Several decades of development allowing:
      - dialogue
      - progress and innovation
      - flexibility and evolution

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Monitoring as a set - 2/2

- **Technics**
  - ✓ Devices: sensors, transmission, energy supply...
  - ✓ QA: components, devices, emplacement of components and sensors...
  - ✓ Data Management...

  - **High level technical Requirements**
    - Non invasive (not to disrupt Safety functions),
    - Robustness (Durable as much as possible and reasonable), THMCR disposal conditions
    - Simplicity, Flexibility, Redundancy and Complementarity...
    - To assess overall view of components...
      » To take into account the certain evolution of technologies over several decades

  - **High level Safety Requirements** (Safety functions...)
    - In close link with
      - • Host rock
      - • Radwaste inventory
      - • Design concept
        + • Constraints of a nuclear facility
        • Constraint of a underground facility

Being pragmatic answering questioning: why, what, how many, where, when, how long... to monitor ?
Specificities of a Radwaste deep geological disposal

- Several decades to more than a century of operating
- Designed for Post closure (passive long term safety)
- Progressive development over time...

But common aspects with other areas from which Radwaste deep geological disposal could benefit and share

- Nuclear power plants/facilities (incl. decommissioning)
- Dams
- Railway and road tunnels, bridges...
- Petroleum Industry/engineering (Reservoir Geoscience and Engineering)
- \( \text{CO}_2/\text{H}_2 \) geological storage
- ....

- Data sciences (Big data, AI...)
- ...

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I wish you a fruitful Moden2020 Final Conference

And

I hope you will enjoy your stay in Paris