

WATRP Mission to the Czech Republic

International peer review  
of the Czech programme of the geological repository development

## **Background materials**

# **The Terms of Reference of the WATRP Mission to the Czech Republic**



# 1 The Terms of Reference of the WATRP Mission to the Czech Republic

## 1.1 Subject of the Mission

International peer review of the Czech programme of a deep geological repository development.

## 1.2 Objective of the Mission

A state supported programme of development of a deep geological repository in the Czech Republic started in early ninetieths. The WATRP Mission organised in 1993 revised plans and capabilities of the Czech institutions to run this programme at that time. After the completion of conceptual/planning and area survey stages of a repository siting and prior to the start of site characterisation stage, it is requested to assess whether the development activities are carried out and planned optimally, economically and effectively.

## 1.3 Background

The operation of existing power reactors (3760 MWe installed capacity) is expected to produce about 3,800 tHM of spent nuclear fuel and of more than 20,000 m<sup>3</sup> of waste (after conditioning), which is not acceptable for the existing near surface disposal facilities.

The Concept of Radioactive Waste and Spent Nuclear Fuel Management in the Czech Republic, approved by the Czech Government in May 2002, considers the direct disposal of SNF in a deep geological repository as a main method. Supposed that waste disposal will start in 2065 the Concept sets the following goals for the management of SNF and long lived waste:

- to store SNF until a repository is available (cask dry storage technology has been applied),
- to include in the regional (land-use) plans 2 sites suitable for a deep geological repository by 2015,
- to confirm a site where the repository can be built by 2025,
- to build a confirmation underground laboratory in the final site after 2030,
- to support alternative technologies for management of SNF (e.g. transmutation).

The programme of the deep geological repository development is running in several directions. The main effort is devoted to the repository siting, which is in an initial step of the site characterisation phase. Current goal is to narrow down the size of 6 sites selected for future investigation during the screening of the Czech Republic territory. Design and engineered barrier studies are based on a generic (non-site specific) design of the disposal facility; some optimisation studies have been completed and research of barrier materials has been initiated. Safety studies were focused on preparation of modelling tools/procedures and on demonstrating generic repository safety (safety case, natural analogue studies). Some activities are carried out regarding the project management (planning, budgeting, QA, public involvement, information collection, international co-operation, etc.).

## 1.4 Scope of the Mission

It is expected that the WATRP team will evaluate a progress reached from the beginning of the Czech programme of the deep geological repository development and will also assess the planned activities. Namely the following issues shall be addressed:

- A relevance of the activities performed/planned to a generally acknowledged scope of a geological repository development.
- An appropriateness of the carried out/planned activities to the extent of the national waste management programme and its timing.
- An appropriateness of capacities allocated to the Czech programme.
- A complexness of the programme.
- An adequacy of public information/involvement programme.
- Other issues proposed by WATRP team members.

## 1.5 Counterpart team

The counterpart team will be headed by Mr. V. Duda, the director of Radioactive Waste Repository Authority.

The team itself will consist of members of RAWRA staff involved in the deep geological repository development and of experts from subcontracting institutions representing the major directions and activities of the programme.

Also, representatives of the regulatory body and other state institution, as well as members of the RAWRA Board, will be invited to join the meeting.

## 1.6 Background materials

WATRP experts will be provided with the following materials (in English):

- a) An overview of the activities carried out within the development of a deep geological repository (1993 – 2003)

This overview contains abstracts of all particular projects, information about the authors, time schedule and costs of a project. It is divided into the following chapters:

- Geological aspects (siting studies, supporting studies)
- Engineered barriers (SNF characteristics, buffer and sealing materials)
- Safety aspects (incl. natural analogue studies)
- Design studies (reference design, optimisation studies)
- Transmutation of SNF (pyrochemical and hydrochemical partitioning, transmutor physics)

- Generic studies (international co-operation, QA, project management, public involvement)
- b) The development of a deep geological repository (overview of the programme 1993 – 2003)

Document summarising activities carried out and main results reached during the mentioned period. It consists of the following chapters:

- Development of a deep geological repository in the Czech Republic (national strategy, siting, design of a facility, engineered barrier studies, safety studies, co-ordination of the programme, social/legislative aspects, overview of the costs of the programme)
  - Programme of future activities (siting, development of engineered parts of a repository, safety studies, public involvement, international co-operation, alternative technologies)
  - Enclosures (safety case, reference design)
- c) RAWRA Annual Reports (2001, 2002)
  - d) Medium Term Strategy documents
    - RAWRA annual and mid term plan

## **1.7 Mission timing**

The following time schedule of the Mission preparation and performance is proposed:

- 16 February 2004 - The selection of experts, source material sent to the Agency, development of a tentative review programme
- 16 April 2004 – Questionnaire / comments from the expert team delivered to RAWRA
- 17-21 May 2004 - WATRP meeting in Prague
- 30 June 2004 - Draft WATRP mission report sent by the IAEA to RAWRA  
15 July 2004 – Comments on the draft report forwarded by RAWRA to the IAEA
- 15 August 2004 – Final WATRP mission report forwarded by the IAEA to RAWRA.

## **1.8 Contact links**

IAEA: J.M.Potier@iaea.org  
Phone: +43 1 2600 22662

RAWRA: Duda@rawra.cz  
Phone: +420 2215 21511