

# **J9-TM-42929: Technical Meeting to Discuss Human Intrusion and Future Human Actions in relation to Disposal of Radioactive Waste**

24 - 28 September 2012, IAEA Headquarters Vienna

**WG3: TOR**

Draft

## Members of the WG3

PLEASE DO NOT REMOVE

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# TOR WG3

## Content

- Background
- Objectives of the working group
- Terminology
- Scope and output of the working group
- Working plan and schedule
- Working tasks and assignments

# TOR WG3

## ■ Background

- IAEA and NEA as well as ICRP in their development of their safety guidance and recommendations recognize importance of intrusion into the disposal facility, however no detailed information is available regarding how to address intrusion issue in the regulations and implementation.
- Generic agreement that inadvertent HI should be considered but no international position
- We should take into account HI early in the disposal process what sets potential contradicting requirements
- Consensus that it exists measures to deter intrusion but we need to identify them in a structured way.
- There are different types of measures: institutional measures, siting and design and its association with future HI
- There are different kind of disposal facilities and there is a need to study and compare these design in order to develop common approach to deter HI
- What can we do to improve HI countermeasures for existing facilities
- Derive lessons learned from current facilities already in operation for the designing/siting of future disposal
- What kind of scenarios should we apply to geological/near surface disposal? How do we develop scenarios in the context of siting and design,
- Need of consideration of WAC (near surface disposal) and the time frame to meet performance ?
- Trends to use similar high level hypothesis (e.g. away from dense population, low mineral resources) but how to apply to specific case and which weight.
- In this context, WG3 focus on design and siting aspects

## TOR WG3

- Objectives of the working group
  - Cross fertilizations among IAEA member states to strengthen the common understanding of HI issues
  - Understand and assess
    - the significance and consequences of HI to the safety function
    - the interaction and relationship between siting and HI scenario assessment
    - the interaction and relationship between design and HI scenario assessment
  - Identify key measures and features
    - to deter potential human intrusion
    - to reduce HI consequences

# TOR WG3

## ■ Terminology

### • Design (Ref. IAEA glossary)

- In waste disposal context, given a site (or at least a host formation type) and a waste inventory (at least indicative), design is the combination of
  - a general architecture (2D, 3D map),
  - a set of components expected to fulfill the repository safety functions (host formation, engineered structures, engineered barriers ...)
  - and functioning principles.

The completeness and accuracy of the design depends on the stage of development of the repository project which is considered. At an early stage (project with no sited) the “site” information might only be a host formation type and the “waste” information an indicative content of the waste. Later on (siting, further iteration of the safety case ...) the information will be more detailed (hydrogeologic context, waste packages definition ...)

- Siting (Ref. IAEA glossary)
- Countermeasures
- Safety function
- ...

## TOR WG3

- Scope of the working group
  - Inadvertent HI
  - HI after loss of institutional control
  - HI that would affect the integrity and safety function of repositories
  - Applicable to near-surface and deep geological disposal repositories
  - Features and measures of siting and design that are relevant to
    - reduce the consequences
    - deter HI
  - Current human behaviours and technologies

## TOR WG3

- Working plan and schedule

This draft of “Terms of Reference”(TOR) for WG3 was produced at the end of the first meeting on HI (TM-4929 – 24-28/09/2012)

The work plan under TOR is:

- Those working methods could include further meetings, consultancies, and correspondence by emails among group members.
- The IAEA secretariat shall schedule the meetings of the WG.
- The planning assumption is that a WG plenary will meet once a year, normally in Vienna. As determined by the WG other meetings and consultancies may take place.
- No provisional target date for the end-product has been decided
- Regular interactions with other WGs for integration and reviewing.
  
- Provide a draft plan for the group and assignments (tasks)



## TOR WG3

- Working tasks and assignments
  - Collect and exchange information and experience gained on siting and design features that influences HI (all members)
  - Identification of the components of the disposal system that can be impacted by HI (B. Eid,U. ElGhawi, F. Dragolici, C.Virtopeanu)
  - Identify differences and commonalities between national programs (B.Guiot, B. Eid, T. Beuth)
  - Identify differences and commonalities between near surface and geological disposal systems (J. de Meredieu,S. Lei, D. Cho)
  - Identify measures and features that can be taken during the siting/design in order to deter and reduce consequence of HI (M. Capouet, D. Cho,J. Walker, B. Guiot, M. Muneer)
  - Identify cross cutting issues and integration among groups (e.g.; overlapping issues pertaining to HI) (T. Beuth, B. Eid)
  - Derive key conclusions (T. Beuth, B. Eid)