cepn

MUTADIS

Considering the modalities of intergenerational transfer associated with radioactive waste management

Thierry Schneider, Caroline Schieber,
Serge Gadbois, Gilles Hériard Dubreuil

11th EAN workshop
Athens, Greece, April 9-11, 2008

Introduction

MUTADIS

- Long term persistence of radioactivity of the waste gives a new timescale dimension never experimented
- Long term governance was addressed within the COWAM2 European project by exploring the elements able to contribute to a better integration of technical and societal dimensions and to favour the intergenerational transmission of knowledge and surveillance systems
- Reflection shared by a working group involving stakeholders from different origins and European countries

Long term period and future generations (1)

MUTADIS

- **A new temporal perspective in risk management**
  - From a technical point of view
    - Assessment of the performance of the technical management system over several centuries to several thousands of years
    - Limits of predictability of the different components of the protection system: uncertainties increasing with time dimension
    - The 'absolute' safety cannot be demonstrated

Long term period and future generations (2)

MUTADIS

- **A new temporal perspective in risk management**
  - From a societal point of view
    - "The future started yesterday" - "Rolling present"
    - The whole society is undertaking a waste management process
    - Question is mainly how to transfer to the next generation(s) a management system allowing to maintain and organise the surveillance, and to keep the memory of the installations

Long term period and future generations (3)

- **Long term governance**
  - Asking the question of long term cannot be envisaged as defining how the society (and future generations) will have to be organised in several centuries (or thousands of years) for the management and the surveillance
  - Need to create management processes favouring the transfer to the future generation(s) of a a "safety patrimony" (knowledge, protection options, processes,..)
  - These processes can evolve with time. It will be the responsibility of future generations to continue or change these processes in order to adapt them to new conditions

Long term period and future generations (4)

- **Long term governance**
  - Need to combine the technical and societal perspectives in order that technical options be designed in a way which can answer societal concerns
    - Which degree of flexibility for future generation (=> the stakes of retrievability)?
    - Which are the knowledge to be transmitted?
    - Which level of surveillance?
    - …

Ethical guidelines - Responsibility, justice, democracy (1)

MUTADIS

- **A specific topic investigated in the COWAM project**
  - Identify ethical principles to encourage the transfer to the next and following generations of the whole waste management system (not only consider the avoidance of "undue burdens")
  - Work on the issues of responsibility, justice and democracy
  - The stakeholder group with the research team drawn up 20 ethical criteria to assess the modalities of radioactive waste management

Ethical guidelines - Responsibility, justice, democracy (2)

MUTADIS

- **Long term responsibility**
  - The present generation should provide the next generation with some appropriate sustainable means (processes, money, institutions, knowledge, know-how, etc.) for the implementation and assessment of radioactive waste management systems
  - A long term radioactive waste management policy should flexibly articulate the current decisions with the future capacity of actions.
  - Appropriate organisation should be implemented to ensure the conservation of information, knowledge and know-how on radioactive waste management

Ethical guidelines - Responsibility, justice, democracy (2)

- **Long term justice**
  - A municipality that accepts to manage the country's radioactive waste should benefit from the nation's long-term solidarity.
  - A municipality that accepts to host a radioactive waste management facility should be entitled to funding for the socio-economic development of its territory.
  - This funding should be aimed at supporting sustainable development of the territory in order to ensure continuity in the vigilance and surveillance of the site by the local population

Ethical guidelines - Responsibility, justice, democracy (3)

- **Long term democracy**
  - A system of long-term democratic governance requires a flexible political procedure combining the people's representation, participation and deliberation.
  - The institutions in charge of radioactive waste management should be subjected to democratic control and be counter-balanced by the empowerment of citizens through the generations.

Continuity and sustainability of surveillance and monitoring (1)

MUTADIS

- **COWAM 2 : Identification of several aspects of surveillance**
  - Surveillance of the site
  - Monitoring the environment of the facility, maintaining the facility, managing all activities on the site, including the possible retrieval of waste packages
  - Reassessment of safety level
  - Preserving and transmitting waste management know-how
  - Preservation and transmission of knowledge and know-how
  - Organisation of local/national/international vigilance,…

Continuity and sustainability of surveillance and monitoring (2)

- The durability and efficiency of protection systems rely notably on:
  - The organisation of surveillance and monitoring
  - The development of a pole of competence
  - A sustainable socio-economic development of territories
  - An equitable distribution of responsibilities between territories and generations

Continuity and sustainability of surveillance and monitoring (3)

MUTADIS

- **Surveillance, vigilance and conservation of memory**
  - Clear organisation of a regular surveillance and monitoring
  - Transfer between generations of the surveillance system
  - Involvement of local stakeholders in the surveillance system
  - Sustainable financing systems for the structure in charge of the surveillance
  - Capacity to mobilize international resources to be studied

Continuity and sustainability of surveillance and monitoring (4)

- **Development of a pole of competence**
  - Need to maintain, develop and create knowledge and know-how
  - Creation of a pole of competence for operation, maintenance and surveillance of waste management installations
  - Capacity to mobilize external expertise (local, national or international level) integrated in the functioning of the pole of competence
  - Transfer of expertise between generations

Continuity and sustainability of surveillance and monitoring (5)

MUTADIS

- **Placing the radioactive waste storage/disposal management and surveillance in a local/regional socio-economic development**
  - Surveillance function to be integrated in a global plan for a sustainable territorial socio-economic development
  - Need to establish systems to guarantee that the storage/disposal is compatible with the territorial development
  - Need to study the development of economic activities linked with the existence of the storage/disposal, for example with the environmental surveillance and monitoring

Continuity and sustainability of surveillance and monitoring (6)

- **An equitable distribution of responsibilities between territories and generations**
  - A clear distribution of responsibilities between local, national and international actors
  - Reinforcement of the notion of "safety heritage" to create a "safety link" between local, national and international actors, and between generations
  - Interest of an international convention on the "protection of radioactive waste disposal" ?

Conclusion

- Consideration of the timescale dimension cannot be reduced to the only technical aspects
- The objective is not to make predictions on the future of the society but to build a sustainable protection system including long term considerations such as:
  - Transmission of knowledge and radiation protection competences
  - Organisation of surveillance and its evolution with time
  - Link between socio-economic development and organisation of the surveillance
- Elaboration of options for radioactive waste management should also involve other stakeholders in society who will be directly or indirectly concerned by the existence of the waste management facilities

Perspectives

- **COWAM-In-Practice**
  - 5 countries (France, Romania, Slovenia, Spain, UK)
  - National stakeholder groups
  - Working on the conditions for the practical implementations of the intergenerational transfer:
    - the practical organisation of the surveillance and the long term monitoring,
    - the contribution of local liaison committee in the intergenerational transfer of protection,
    - the relationship between the local sustainable development and the sustainability of the surveillance,
    - the practical implementation of retrievability
    - the stakeholders involvement in the elaboration of radiation protection criteria for assessing the long term performance of the waste management options.