



Jacques Delay
IGD-TP Secretary General
Andra
France

To

Karina Firkaviciute
Policy officer,

09th May 2016,

Object: IGD-TP's input to the SET Plan Action 10 Issue Paper

Dear Madam,

Following your mail on the "SET plan Action 10 Issue Paper", please find here after a statement from the Executive Group of the IGD-TP (Implementing Geological Disposal of Radioactive Waste – Technology Platform). The IGD-TP Executive Group represents a vast majority of established national waste management organizations in European Member States. These organisations are officially in charge of carrying out RD&D (Research, Development and Demonstration) towards the long-term management of radioactive waste and/or of implementing geological disposal as a solution for this long-term objective.

The IGD-TP will be formally represented at the SET Plan Steering Group Meeting to be held in Brussels May 24th, by Mr Philippe Lalieux, Member (and former Chair) of our Executive Group.

I take this opportunity, on behalf of the Executive Group, to thank the SET Plan Secretariat for allowing us to provide input.

Overall context

- Whatever the national policies regarding nuclear energy, the safe and responsible long term management of radioactive waste (including spent fuel if considered as waste) is needed. Indeed, radioactive waste has been produced and will continue to be produced, not only from the operation of existing power plants but also from R&D, medicine and other industrial use of radioactivity. Such long-term management must therefore include current wastes as well as legacy waste, arising from decommissioning of past, current and future nuclear facilities, and waste that will undoubtedly be produced by advanced nuclear technologies.
- The recycling of actinides in advanced reactor systems (e.g. Generation IV) would maximise the energy gained from mined uranium. These advanced systems could also contribute to the optimisation of a geological disposal facility, but cannot eliminate the need for geological disposal as a safe solution for long term waste management. These new reactor systems would indeed still generate substantial amounts of radioactive waste, although the proportion (in volume) of high-level waste would be smaller.
- In line with the Waste Directive 2011/70/Euratom, it is of key importance to further support the implementation in Europe of geological disposal facilities for high level waste (including spent fuel if considered as waste) and long-lived waste in order to provide for the responsible and safe long-term management of such wastes.
- The scientific and technological knowledge base that has been acquired over more than 40 years of geological disposal research is considerable. This knowledge, which has been acquired with the help of EC funds, is considered globally sufficient to progress towards licensing. However, this knowledge

must also be maintained and increased throughout the incremental development, operation and closure of disposal facilities, which will be spread over many decades.

- To date no such geological disposal facility for high-level and long-lived waste has yet been built. However, good progress is being made in several Member States which are approaching the construction and operational phases. The first licence for a repository for spent fuel has recently been granted.
- To date, beside the more advanced disposal programmes, several Member States are starting to develop their own disposal programmes. It would not be an optimal use of existing knowledge, and of the EC funds already invested in acquiring this knowledge, to squander any opportunity to benefit these less advanced programmes through continued EC support of these activities.

Need for RD&D in support to geological disposal

- RD&D serves several purposes: it provides input to system design and optimisation and makes essential contributions to siting of the repositories. It furthermore contributes to achieving a sufficient level of system understanding to allow an adequate evaluation of safety. The priorities of RD&D depend upon the stage of the programme's lifecycle and change with progress of the programme. In the early phases the emphasis is on the development of basic concepts, combined with an evaluation of safety and of technological feasibility in principle, taking into account the country-specific boundary conditions. This early phase is followed by system optimisation, with the main emphasis on post-closure safety and correspondingly on (site-specific) geology and design concepts with the system of engineered barriers becoming more tailored to the specific geological conditions envisaged. In the later stages, when moving towards implementation, practical issues become increasingly important, such as construction procedures, operational safety, and optimisation of technology (including "industrialisation" of repository operation).
- RD&D effort will continue to be necessary throughout the lifecycle of radioactive waste management in order to ensure optimisation of management routes in general and of disposal solutions in particular, as well as to comply with the waste directive obligations. RD&D will also continue to be compulsory to address evolving regulatory concerns.
- Furthermore, there is a high risk of shortage, at the European level and at short to medium timescales, of the skilled, multidisciplinary human resources needed to develop, assess, licence and operate geological disposal facilities; this shortage may affect not only waste management organisations, but also authorities, research organisations, academia and supplier industries. Dedicated RD&D efforts will help bridge this shortage.
- Last but not least, stakeholders' concerns regarding the safety of geological disposal and the protection of the environment it provides must be addressed in a systematic way and the commitment of local communities that will host geological disposal facilities will have to be maintained over the years. RD&D plays a major role in addressing these two challenges.

Need for support from the EC

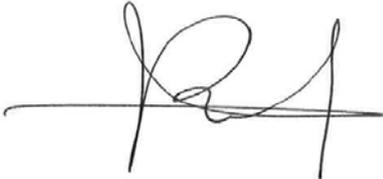
- In line with the waste Directive 2011/70/Euratom, in order to provide responsible and safe radioactive waste management it is of key importance for the EC to further support implementation of geological disposal and provide elements of demonstration of operational and long term safety of the installations; this will be instrumental in gaining public and regulatory confidence as well as in demonstrating the implementation of national policies that are required under the above mentioned directive.
- When establishing an RD&D programme, sufficient thought has to be given to the personnel and infrastructure necessary to undertake the work; for that purpose, it is highly beneficial to stimulate opportunities for co-operation with other waste management organisations in a bilateral or multilateral manner or within the framework of international projects and organisations. In this context, the EU programmes offer several platforms for co-operation in RD&D that can be an efficient way of performing the necessary RD&D work. Specifically, the IGD-TP provides many opportunities for RD&D collaboration in a flexible manner, which permits a range of possible collaboration modes.
- As quoted in the waste Directive 2011/70, the IGDTP has a role in knowledge and technology transfer towards less advanced disposal programmes or Member States wishing to embark on a nuclear programme. This cannot be done solely by the national waste management organisations as they are not mandated to do so.

Finally, IGD-TP is deeply involved in the on-going JOPRAD Project that aims at studying the possibilities of setting up a Joint Programming on RD&D in the field of Radioactive Waste Management more particularly on geological disposal but including overall thematic, in particular radwaste characterisation, treatment and conditioning, in a systemic view. This Joint Programming, strongly promoted by the EC and potentially gathering the whole research community in the domain can only be successful with an increased and sustained funding by EC.

For the EG of IGDTP

Jacques Delay

IGDTP Secretary General,

A handwritten signature in black ink, consisting of a horizontal line with a stylized, cursive flourish above it that resembles the letters 'JD'.