Management of spent fuel and radioactive waste: EU legal framework

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The Commission presented a report on the progress of the implementation of Council Directive 2011/70 /EURATOM and an inventory of radioactive waste and spent fuel present in the Community's territory and the future prospects.

As part of the implementation of Directive 2011/70/Euratom, Member States are required to report to the Commission their inventory of all radioactive waste and spent fuel, clearly indicating the location and amount in accordance with an appropriate classification.

Moreover, Member States' reports should include estimates of future quantities, including those from decommissioning, and they should provide an update of their inventory and projections every three years.

Estimated inventory: according to the report, the estimated total inventory of **radioactive waste** on the EU territory is 3 313 000 m3, of which about 70% has been disposed of (2 316 000 m3) and about 30% is in storage (997 000 m3).

At the end of 2013, more than 54 000 tonnes of **spent fuel** was stored in the EU. More than 800 tonnes of spent fuel (about 1.5% of the total inventory) was stored in a third country pending reprocessing.

The majority of Member States operating nuclear power plants intend to dispose of their spent fuel in deep geological facilities without reprocessing in the future. This is expected to lead to an increase in the volume of high level waste for storage and disposal. Moreover, decommissioning of nuclear power plants will become an increasingly important activity for the European nuclear industry in the coming years.

Several Member States have **not provided detailed estimates** of their future inventory of spent fuel and /or radioactive waste, as most of them use their own classification system and the Directive does not provide for a harmonised approach. In addition, a number of Member States have not reported on all types of radioactive waste, particularly radioactive waste originating from decommissioning and new builds, future forecasts and institutional waste. The Commission is therefore **not in a position to make forecasts on the future total EU inventories**.

National policies and programmes: the Directive requires Member States to put in place: (i) **national policies**, which broadly describe the approach Member States are taking for all steps of radioactive waste and spent fuel management; (ii) **national programmes**, which translate the national policies into concrete plans of action, in order to ensure progress is made, and to enable monitoring thereof; (iii) **national legislative, regulatory and organisational frameworks** to enable the implementation of the national policies and programmes.

After examining national policies, frameworks and programmes, the Commission concluded that the legislative and regulatory framework at national level is broadly in line with the Directive. It noted that all but one Member State have reported to the Commission their national policies. Most Member States have established **clear ultimate responsibility** of the State for spent fuel and radioactive waste management in line with the Directive.

The most important outstanding issue in a large number of Member States with regard to national policies is the decision on the long-term management of intermediate level waste, high level waste and spent fuel,

and specifically their disposal. Moreover, half of Member States are considering the possibility of shared solutions for disposal.

While the Directive allows shared disposal solutions to be developed, a policy based only on this option, without a clear path towards implementation, cannot be regarded as being in line with the aims of the Directive. The Commission sees **important challenges in putting shared solutions into practice**.

The Commission will continue supporting Member States in addressing the relevant challenges as follows:

- assist Member States in the next reporting cycle (in 2018) to **improve radioactive waste inventory data**, for example by providing a clear definition of the different sources of radioactive waste and their origins;

- **carry out additional work** with the aim of compiling a comprehensive overview of the total costs for spent fuel and waste management and how Member States ensure that these are financed according to the principle that all generators are to cover the costs of the management of spent fuel and radioactive waste (from generation to disposal);

- **discussion on options for radioactive waste and spent fuel disposal**, including shared solutions and the role of public participation in the decision-making process. The Commission stands ready to support the Member States in assessing the economic, legal and social impacts of shared repositories.

In addition, the Commission, in consultation with Member States and the European Nuclear Safety Regulators Group, will continue **working together with international organisations** (e.g. the IAEA and the OECD Nuclear Energy Agency) on exploring the possibilities for harmonising and facilitating reporting requirements for Member States' inventories for spent fuel and radioactive waste.

In this regard, the periodic international peer reviews of the national programmes, frameworks and competent regulatory authorities are of high importance in building stakeholders' trust and confidence in the management of these materials in the EU. The Commission will continue to promote an **open and transparent dialogue** and facilitate the exchange of good practices and knowledge.