

Impact of EC Waste Directive 2011 on Regional Disposal Initiatives

Summary

On 19th July, the Council of the European Union, after a long period of consultation, adopted a directive on the responsible and safe management of spent fuel and radioactive waste. The directive covers all stages of the management of spent fuel and radioactive wastes. Each member state has ultimate responsibility for management of the spent fuel and waste generated in its territory. The following comments focus on the implications for European (and other) initiatives for shared regional repositories.

The main message is that the option of EU Member States sharing repositories is included by Clause 3 in Article 4 on General Principles which states that *“Radioactive waste shall be disposed of in the Member State in which it was generated, unless at the time of shipment an agreement ... has entered into force between the Member State concerned and another Member State or a third country to use a disposal facility in one of them.”* This implies that regional cooperation could be an important aspect of the detailed plans that the EC expects Member States to produce within 4 years. This note examines for ERDO-WG Members and for Arius how the Directive affects their waste management planning and, in particular, comments upon how the issue of waste export/import is dealt with in the Directive and associated EC documentation. In particular, it highlights how, for several Members States, meeting the requirements of the proposed Directive can be significantly facilitated by access to the deliverables from the ERDO-WG activities.

Relevant texts from the Explanatory Memorandum to the Directive

The EXPLANATORY MEMORANDUM that accompanied earlier drafts of the Directive includes the important statement that *“(f)or High Level Waste (HLW)....there is a world-wide scientific and technical consensus that deep geological disposal represents the safest and most sustainable option”*. This is significant, given that opponents of nuclear expansion plans have recently (and increasingly) been challenging the stated consensus, despite the fact that it forms the basis of governmental waste management policies in almost all European countries (excluding Scotland). Further into the Waste Directive one finds also the statement that *“(t)he storage of radioactive waste, including long-term storage, is an interim solution but not an alternative to disposal”*. Again, this is a significant statement, which challenges the assertions made by some anti-nuclear groups.

The entire Directive is obviously of relevance for all EU Member States. The fact that the Commission sees it as potentially having an even wider impact is reflected in the statement that *“(t)he proposed Directive will implement the highest safety standards for spent fuel and radioactive waste management in a comprehensive manner and will thus form a model and benchmark for third countries and regions”*.

Finally in the explanatory memorandum, the objective of the Directive is described as *“the establishment of a Community framework for responsible management of spent fuel and radioactive waste, ensuring that Member States make appropriate national arrangements for a high level of safety and maintain and promote public information and participation”*. This definitely implies that all Member States must have national **plans** – but does not stipulate that these must be based only on national **facilities**. Some of the implications for the national planning in States that do consider the regional disposal options are pointed out below.

Relevant texts from the Preamble to the Directive

In the present context, the key paragraphs in the introduction are as follows:

(9) “Council Directive 2006/117/Euratom (1) lays down a European Atomic Energy Community (‘Community’) system of supervision and control of transboundary shipments of radioactive waste and spent fuel. That Directive was supplemented by Commission Recommendation 2008/956/Euratom of 4 December 2008 on criteria for the export of radioactive waste and spent fuel to third countries.”

Commission Recommendation 2008/956/Euratom of 4 December 2008 is specifically on criteria for the export of radioactive waste and spent fuel to third countries (i.e. countries outside the EU). In addition to its basic message that all countries exporting or importing wastes must have appropriate national capabilities and arrangements, the recommendation points out explicitly that:

- The decision to authorise shipments of radioactive waste or spent fuel to third countries is the responsibility of the competent authorities of the exporting Member State.
- Considerations, such as political, economic, social, ethical, scientific and public security matters, may be taken into account for authorising shipments of radioactive waste or spent fuel to a third country.
- States that treat wastes from others or that reprocess fuel from others have a right to return the wastes to the country of origin.

Current European **legislation** therefore apparently allows export to third countries under specified conditions – although EU **policy** statements have been made against export out of the EU. As described below the new Directive offers the choice between national disposal, sharing with other Member States, or export out of the EU, with the last two options required to fulfil specific conditions.

(28) “Member States should establish national programmes to ensure the transposition of political decisions into clear provisions for the timely implementation of all steps of spent fuel and radioactive waste management from generation to disposal. It should be possible for such national programmes to be in the form of a single reference document or a set of documents”.

This requirement is valid for all Member States whether they are developing plans for national disposal, for regional repositories or for both in a dual track-approach. The implication is that a European Repository Development Organisation must be able to prepare a suitable programme for use by its Members.

(32) “Cooperation between Member States and at an international level could facilitate and accelerate decision- making through access to expertise and technology”

(33) “Some Member States consider that the sharing of facilities for spent fuel and radioactive waste management, including disposal facilities, is a potentially beneficial, safe and cost-effective option when based on an agreement between the Member States concerned”

These are the points which impact directly on the activities of the ERDO-WG and, later, the ERDO itself. Sharing of knowledge and expertise has been a key goal of the ERDO-WG since its inception. Any final agreements to share facilities would be predicated on extensive preparations to be carried out over the next

several years following establishment of the ERDO, based on the groundwork being tackled at present by the Working Group.

Relevant texts from the legally binding parts of the Directive

The overarching key article, Article 4, formally lays down the following General Principles:

(1) Member States shall establish and maintain national policies on spent fuel and radioactive waste management. Without prejudice to Article 2(3), each Member State shall have ultimate responsibility for management of the spent fuel and radioactive waste generated in it.

(2) Where radioactive waste or spent fuel is shipped for processing or reprocessing to a Member State or a third country, the ultimate responsibility for the safe and responsible disposal of those materials, including any waste as a by-product, shall remain with the Member State or third country from which the radioactive material was shipped.

(3) National policies shall be based on all of the following principles:

(a) the generation of radioactive waste shall be kept to the minimum which is reasonably practicable, both in terms of activity and volume, by means of appropriate design measures and of operating and decommissioning practices, including the recycling and reuse of materials;

(b) the interdependencies between all steps in spent fuel and radioactive waste generation and management shall be taken into account;

(c) spent fuel and radioactive waste shall be safely managed, including in the long term with passive safety features;

(d) implementation of measures shall follow a graded approach;

(e) the costs for the management of spent fuel and radioactive waste shall be borne by those who generated those materials;

(f) an evidence-based and documented decision-making process shall be applied with regard to all stages of the management of spent fuel and radioactive waste.

4. Radioactive waste shall be disposed of in the Member State in which it was generated, unless at the time of shipment an agreement, taking into account the criteria established by the Commission in accordance with Article 16(2) of Directive 2006/117/Euratom, has entered into force between the Member State concerned and another Member State or a third country to use a disposal facility in one of them.

Prior to a shipment to a third country, the exporting Member State shall inform the Commission of the content of any such agreement and take reasonable measures to be assured that:

(a) the country of destination has concluded an agreement with the Community covering spent fuel and radioactive waste management or is a party to the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management ('the Joint Convention');

(b) the country of destination has radioactive waste management and disposal programmes with objectives representing a high level of safety equivalent to those established by this Directive; and

(c) the disposal facility in the country of destination is authorised for the radioactive waste to be shipped, is operating prior to the shipment, and is managed in accordance with the requirements set down in the radioactive waste management and disposal programme of that country of destination.

Clearly, all of these principles must and can be followed by States whose national programme includes the option of being involved in regional storage and disposal initiatives. An interesting difference concerns conditions for export to another EU Member State relative to those for export to a third country. In the latter case, an authorised disposal facility must be operating. This has been interpreted to mean that export of HLW or spent fuel to countries such as Russia which do not have operating deep geological repositories is not currently an option.

Article 12 goes on to specify in more detail what a national programme must contain. The requirements are to specify:

- (a) the overall objectives of the Member State's national policy in respect of spent fuel and radioactive waste management;*
- (b) the significant milestones and clear timeframes for the achievement of those milestones in light of the over-arching objectives of the national programme;*
- (c) an inventory of all spent fuel and radioactive waste and estimates for future quantities, including those from decommissioning, clearly indicating the location and amount of the radioactive waste and spent fuel in accordance with appropriate classification of the radioactive waste;*
- (d) the concepts or plans and technical solutions for spent fuel and radioactive waste management from generation to disposal;*
- (e) the concepts or plans for the post-closure period of a disposal facility's lifetime, including the period during which appropriate controls are retained and the means to be employed to preserve knowledge of that facility in the longer term;*
- (f) the research, development and demonstration activities that are needed in order to implement solutions for the management of spent fuel and radioactive waste;*
- (g) the responsibility for the implementation of the national programme and the key performance indicators to monitor progress towards implementation;*
- (h) an assessment of the national programme costs and the underlying basis and hypotheses for that assessment, which must include a profile over time;*
- (i) the financing scheme(s) in force;*
- (j) a transparency policy or process as referred to in Article 10;*
- (k) if any, the agreement(s) concluded with a Member State or a third country on management of spent fuel or radioactive waste, including on the use of disposal facilities*
- (g) the responsibility for the implementation of the national programme and the key performance indicators to monitor progress towards implementation;*

By cooperating in a regional organisation, countries could develop a common programme for addressing many requirements on this list. Only a few points need to have specific national responses – thus illustrating once again the duplication of efforts that can be avoided by regional cooperation, even before the major benefits emerge during implementation of shared facilities.

Article 14 Clause one states that

Member States shall submit a report to the Commission on the implementation of this Directive for the first time by 23 August 2015, and every 3 years thereafter, taking advantage of the review and reporting under the Joint Convention.

Article 15, Clause four then demands that:

Member States shall for the first time notify to the Commission the content of their national programme covering all the items provided for in Article 12 as soon as possible, but not later than 23 August 2015.

This means that, at the latest at the end of 2015, national programmes should include: plans for the construction and the management of final disposal facilities; a concrete timetable for construction, with milestones and descriptions of all the activities that are needed to implement the disposal solutions; cost assessments and the financing schemes chosen. The national programmes do not require that sites have to be identified by then. A credible plan, including target dates for siting, would suffice.

Conclusions

The above texts illustrate that regional disposal facilities remain a legal possibility within the EU. The Directive has specific impacts on EU Member States that support the assessment of the feasibility of shared regional facilities. Most urgent in many cases are the national tasks of allocating responsibilities for decisions related to regional projects, defining present and potential future inventories and establishing financial mechanisms for supporting the work done in cooperation with their regional partners. The other requirements on national programmes related to repository design, post-closure measures, R&D needs, can be met by technical cooperation in teams working with the regional organisation. Even the challenging task of producing credible cost estimates for a shared facility should be relatively straightforward. The issues that need attention and cooperation at the highest political levels are the definition of the milestones towards implementation and the specific responsibilities for this. The ERDO-WG will work on proposing viable approaches to accomplishing these tasks in the most cost-efficient manner. The proposed timescales imply that States must have a plan within four years. The establishment of a formal ERDO with a working programme aimed at satisfying all of the EC requirements that are common to the ERDO participants could be a powerful mechanism to help small Member States.