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**COMMISSION STAFF WORKING DOCUMENT**

**"Shipment Directive"**

*Accompanying the document*

**REPORT FROM THE COMMISSION TO THE COUNCIL, THE EUROPEAN  
PARLIAMENT AND THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE**

**on the implementation by the Member States of Council Directive 2006/117 EURATOM  
on the supervision and control of shipments of radioactive waste and spent fuels**

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## 1. INTRODUCTION

All EU Member States produce radioactive waste, generated by numerous activities, such as electricity production in nuclear power plants and radioisotope applications in medicine, industry, agriculture, research and education. The operation of nuclear reactors also generates spent fuel. Spent fuel means nuclear fuel that has been irradiated in and permanently removed from a reactor core. When spent fuel is unloaded from a reactor core, it is stored in dedicated ponds adjacent to the reactor to allow the initial heat and radiation levels to decrease. From the reactor site, spent fuel is transported by road, rail or sea to either an interim storage site or a reprocessing plant where it will be reprocessed.

Fourteen out of twenty seven Member States have nuclear power reactors in operation, and further two Member States have nuclear power reactors which are being decommissioned<sup>1</sup>. Most Member States have research reactors.

Each Member State is fully responsible for the choice of its own policy on the management of the radioactive waste and spent fuel within its jurisdiction, some choosing reprocessing of spent fuel, others aiming at final disposal of spent fuel with no other use foreseen. Therefore, transport operations of waste or spent fuel occur within and sometimes outside the Community.

The operations involved in shipments of radioactive waste or spent fuel are subject to a number of requirements under Community<sup>2</sup> and international legal Conventions<sup>3</sup> regarding in particular the safe transport of radioactive material and the conditions under which radioactive waste or spent fuel is disposed of or stored in the country of destination.

Further to these requirements, the health protection of workers and the general public requires that shipments of radioactive waste or spent fuel between Member States and into and out of the Community be subject to a compulsory and common system of prior authorisation.

This system of prior authorisation for shipments established in 1992 was modified significantly in 2006.

The Directive<sup>4</sup> on the supervision and control of shipments of radioactive waste and spent fuel, hereinafter "Shipments Directive", is without prejudice to the right of Member States to export their spent fuel for reprocessing and nothing in the Directive implies that a Member State of destination has to accept shipments of radioactive waste and spent fuel for final treatment or disposal except in the case of reshipment.

The existing right of a Member State to object to, or to impose conditions for a shipment remain. Any refusal of such shipments is to be justified on the basis of the criteria set out in the Directive.

Furthermore, the Shipments Directive prohibits the export of radioactive waste to African, Caribbean or Pacific (ACP) countries, in line with the Cotonou Agreement, to a destination south of latitude 60 south or to a third country which does not have the resources to manage the radioactive waste safely.

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<sup>1</sup> The 14 Member States which have nuclear power reactors in operation are Belgium, Bulgaria, Czech Republic, Finland, France, Germany, Hungary, the Netherlands, Romania, Slovakia, Slovenia, Spain, Sweden and the UK; Italy and Lithuania only have nuclear power reactors under decommissioning.

<sup>2</sup> In particular, Council Directive of 13 May 1996 laying down basic safety standards for the health protection of the general public and workers against the dangers of ionizing radiation.

<sup>3</sup> In particular with the IAEA Joint Convention on the Safety of Spent fuel Management and on the Safety of Radioactive Waste Management.

<sup>4</sup> Council directive 2006/117 EURATOM of 20 November 2006 on the supervision and control of shipments of radioactive waste and spent fuel.

The recently adopted Council Directive 2011/70/Euratom<sup>5</sup> -hereinafter "Waste Directive"-, in particular Article 4, introduces additional strong conditions in case of shipment of radioactive waste, including spent fuel considered as waste. The general principle established in the Waste Directive is that "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. This means on the one hand the sharing of disposal sites among Member States is permitted<sup>6</sup>. But on the other hand for international agreements with the purpose of disposal in third countries, the following conditions have to be met:

- Such international agreements shall be contained in the national programmes of the Member States (Art. 12.1k) and accordingly communicated to the Commission (Art. 13.1)
- Prior to the shipment to a third country, the exporting Member State must communicate to the Commission such an agreement and ensure three conditions (Art. 4.4):
  - (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.

In the particular case of high level waste, including spent fuel considered as waste, these conditions represent a 'de-facto' ban on exporting, as deep geological repositories do not exist outside the EU.

As established by Article 2.3 of the Waste Directive, these restrictions to shipments are not applicable in three cases:

- Repatriation of disused sealed sources to a supplier or manufacturer,
- Shipment of spent fuel of research reactors to a country where research reactor fuels are supplied, taking into account applicable international agreements –in particular, those based on the Global Threat Reduction Initiative as explained in Recital 15.
- Waste and spent fuel of the existing Krško nuclear power plant concerning Slovenia and Croatia.

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<sup>5</sup> Council Directive 2011/70/Euratom of 19 July 2011 establishing a Community framework for the responsible and safe management of spent fuel and radioactive waste.

<sup>6</sup> Recital 33 of Directive 2011/70/Euratom: "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".

The Waste Directive does not affect the freedom of Member States to accept spent fuel or waste for processing or reprocessing from third countries and send it back to its country of origin. Similarly, Member States remain free to ship their radioactive waste or spent fuel for processing or reprocessing to another Member State or to a third country. In both cases, the ultimate responsibility for the safe and responsible disposal of those materials, including any waste as a by-product, remains with the Member State or third country from which the radioactive material was shipped.

EU Member States shall bring into force the law, regulations and administrative provisions necessary to comply with the Waste Directive by 23 August 2013.

Coming back to Council Directive 2006/117/Euratom, Article 20 of the Shipment Directive requires Member States to forward to the Commission reports on the implementation of the Directive by 25 December 2011 and every three years and to supplement these reports with information on the situation regarding shipments within their respective territories. On the basis of the Member States' reports the Commission is required, in accordance with the procedure laid down in Article 21 of such Directive, to prepare a summary report for the European Parliament, the Council and the Economic and Social Committee.

Periodical reporting from Member States to the Commission and from the Commission to the European Parliament, to the Council and to the European Economic and Social Committee should provide a useful overview of authorizations and refusals given Community-wide and should identify possible difficulties encountered in practice by the Member States and solutions applied.

The European Commission has the commitment to inform the European citizens in response to their concern and the lack of transparency about radioactive waste and nuclear spent fuels.

This is the first Commission report concerning the implementation of Council Directive 2006/117/ Euratom covering the period 2008-2011. It has been established on the basis of contributions from all Member States and in consultation with the Advisory Committee established by Article 21 of the Directive.

## **2. BACKGROUND: GENERAL PRINCIPLES FOR SHIPMENT AS ESTABLISHED BY THE SHIPMENTS DIRECTIVE 2006/117/EURATOM**

According to Article 6 of the Council Directive 2006/117, a holder who plans to carry out an intra-Community shipment of radioactive waste or spent fuel or to arrange for such a shipment to be carried out must submit a duly completed application to the competent authorities of the Member State of origin. A single application may cover several shipments if the substances involved share the same characteristics and if the route (countries and borders crossed) and the competent authorities are the same.

Where radioactive waste or spent fuel is to be imported into the Community (Article 13 of the Council Directive 2006/117), the consignee must submit this application to the competent authorities of the Member State of destination. Where a shipment is made from a Member State to a third country, the competent authorities in the Member State of origin must contact the relevant authorities in the country of destination.

The shipment cannot be made until the competent authorities of the country of destination and of any country of transit have notified the competent authorities of the country of origin of their approval. The Directive stipulates a period of two months after receipt of the application for notification of approval or refusal. Refusal from a Member State of destination or transit must be justified with regard to the legislation on the shipment and management of radioactive waste or spent fuel or on relevant national, Community or international legislation applicable to the transport of radioactive material.

The competent authorities in Member States of transit or destination may add conditions to the shipment. Nevertheless, for shipments within the Community, it is not possible to lay down conditions which are more stringent than those laid down by the national law of a Member State on the shipment of radioactive waste on its own territory.

Finally, if the conditions applying to the shipment are not complied with or the shipment cannot be completed, the competent authorities of the Member State of origin must ensure that the radioactive waste or the spent fuel in question is taken back by the holder unless an alternative safe arrangement can be made (Articles 8, 9 & 10 of the Council Directive 2006/117).

### **3. IMPLEMENTATION OF THE GENERAL PROVISIONS**

#### **3.1. Transposition of the Directive**

The Shipments Directive required that the Member States had to bring into force before 25 December 2008 the laws, regulations and administrative provisions necessary to comply with the Directive.

Although most Member States met this deadline, a few Member States did not transpose the Directive in time and the Commission opened infringement proceedings against them. The Member States in question subsequently communicated their measures to transpose the Directive and the Commission was able to close these cases during the second half of 2009, with the exception of Greece, whose transposition measures were communicated in September 2010.

Since the end of 2010 the transposition of Council Directive 2006/117/Euratom is completed and it can be considered as being implemented in all EU Member States.

Transposition further details for each Member State are outlined in Annex 1.

#### **3.2. Standard document for the supervision and control of shipments**

The Shipments Directive foresees the use of a standard document for all shipments within the scope of the Directive. Taking into account past experience a new Commission Decision establishing the standard document for the supervision and control of shipments of radioactive waste and spent fuel was published in the *Official Journal of the European Union* in April 2008<sup>7</sup>.

For the shipments of radioactive waste and of spent fuel (including spent fuel destined for final disposal and as such categorised as waste) the standard document provides in its annex the forms for: the application of authorisation; the acknowledgement of receipt of application; the authorisation or refusal of shipment; the description of consignment/list of packages as well as the acknowledgement of receipt of shipment. The standard document also includes a list of minimum requirements of a duly completed application.

Member States have also reported some difficulties in the use of the standard document. Details about the inconsistency and the difficulties encountered are described in part 6. These difficulties will be followed up by the Advisory Committee.

#### **3.3. Competent authorities**

Competent authorities are any authority which, under the law or regulations of the countries of origin, transit or destination, are empowered to implement the system of supervision and control of shipments of radioactive waste or spent fuel. In order to facilitate communication with the Commission all Member States have provided the Commission with the necessary information and contact details of their competent authority or authorities.

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<sup>7</sup> OJ L 107, 17.4.2008, p. 32

The list of competent authorities in the Member States, as well as languages acceptable to them, can be accessed under via the Europa web site of the European Commission under the following link:

[http://ec.europa.eu/energy/nuclear/transport/shipment\\_directive\\_en.htm](http://ec.europa.eu/energy/nuclear/transport/shipment_directive_en.htm).

### **3.4. Transmission**

Under Article 19 of the Shipments Directive the Commission shall establish recommendations for a secure and effective system of transmission of the documents and information relating to the provisions of the Directive. The Commission shall also establish and maintain an electronic communication platform for providing the contact details of the competent authorities in the Member States, the languages acceptable to the competent authorities as well as all general conditions and additional requirements, if any, required for the authorisation of shipments.

The Commission Recommendation for a secure and effective system of transmission of documents and information was published in the *Official Journal of the European Union* in July 2009<sup>8</sup>.

Regarding the electronic platform, the Commission established a website (see the above cited link) containing all relevant information related to the Shipments Directive. The provided data is, where appropriate, updated following information transmitted to the Commission by each Member State as foreseen under Article 18(2) of the Directive.

### **3.5. Advisory committee**

In performing the tasks laid down by the Directive, the Commission is assisted by a Committee of an advisory nature composed of representatives of the Member States. The first meeting was convened in May 2007 with the adoption of the advisory committee terms of reference and work programme for the following years. The Committee held nine meetings organised and chaired by a representative of the Commission.

The advisory committee delivered its opinion especially:

- on the establishment and use of the standard document;
- on the Commission Recommendation establishing criteria for the export of radioactive waste and spent fuel to third countries;
- on the Commission Recommendation for a secure and effective system of transmission of documents.

The opinions of the Committee have been recorded in the minutes.

The experience to date shows that the advisory committee is a good and useful tool to allow representatives of Member States to share their experience with the Commission and between themselves.

### **3.6. Regular reports**

Member States have the obligation to report to the Commission for the first time by the end of 2011 and then every three years on the implementation of the Shipments Directive. On the basis of the Member States' reports, the Commission has established this first summary report for the European Parliament, the Council and the European Economic and Social Committee in order to provide a useful overview of authorisations given Community-wide and to inform about practical difficulties encountered by the Member States and the solutions applied.

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<sup>8</sup> OJ L 177, 8.7.2009, p. 5



The reporting should pay particular attention to cases of reshipment related to non-authorized shipments and undeclared radioactive waste (Art. 4 of the Directive). In the context of this first report, the Commission has not been informed about any shipments that would fall under the provisions of Article 4.

According to Article 20 and the procedures lay down in Article 21 of the Directive, the advisory committee was consulted on the draft report and the associated working document. No major comments were received from the members of the advisory committee, mainly updates of contact details were provided.

#### 4. INFORMATION FROM MEMBER STATES ON SHIPMENTS

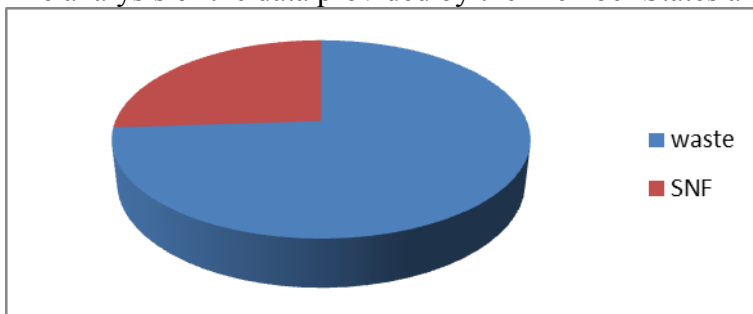
The Shipments Directive adequately ensures that shipments of radioactive waste and spent nuclear fuel between Member States take place only with the prior informed consent of the competent authorities of all the Member States involved.

Over the 27 Member States, 14 Member States authorized shipments within the scope of the Directive.

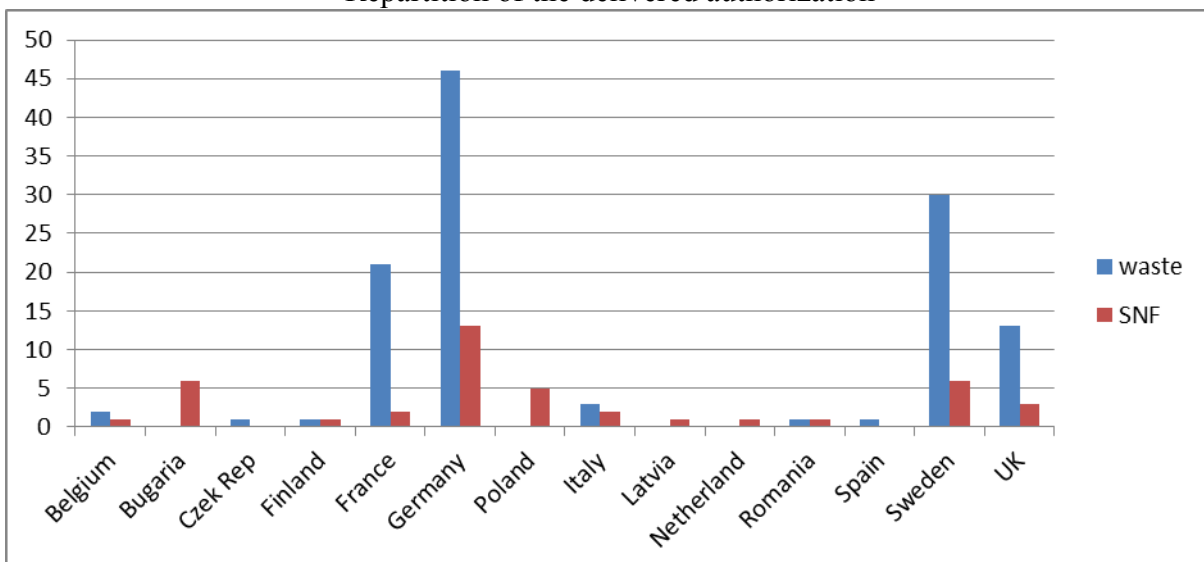
The number of authorisations is relatively small. In the period covered by the present report Member States reported the delivery of 161 authorisations<sup>9</sup> within the scope of the Directive. 74% of the authorisations are related to shipment of wastes, the remaining 26 % are shipments of spent nuclear fuels.

Most of the shipments are shipments between Member States.

The analysis of the data provided by the Member States are illustrated below



Repartition of the delivered authorization



Authorizations delivered by the Member State

<sup>9</sup> some authorisations are given for several shipments to be carried out over a time period that may exceed that covered by the present report

Exportation:

Nine (9) Member States reported authorisation for exportation mainly of spent nuclear fuels outside the EU with Russia , China, Switzerland, Japan, USA and Norway as final destination.

The table gives an overview of exports of waste and spent fuels outside the EU during the considered period of reporting (2008-2011)

EC COUNTRY (authorising the shipment)	THIRD COUNTRY of destination	Number of Authorisation W(aste) / SNF	Purpose of the shipment
BULGARIA	RUSSIA	6 SNF (Nuclear industry)	reprocessing
FRANCE	CHINA	1 W	return
FRANCE	SWITZERLAND	1 W	return
FRANCE	USA	1 W	return
GERMANY	SWITZERLAND	6 W	return
GERMANY	USA	1 SNF (research)	reprocessing / storage
GERMANY	USA	1 W	return
LATVIA	RUSSIA	1 SNF (research)	reprocessing
PORTUGAL	USA	1 SNF (research)	reprocessing/ storage
POLAND	RUSSIA	5 SNF (research)	final disposal
HUNGARY <sup>10</sup>	RUSSIA	1 SNF (research)	reprocessing/ storage
SWEDEN	SWITZERLAND	1 W	return
SWEDEN	NORWAY	1 SNF (research)	scientific research
SWEDEN	JAPAN	1 SNF (research)	scientific research
UK	JAPAN	1 W	return

From the data, the Commission notes that 29 authorisations for exportation were given by 9 Member States. 59 % of the authorisations are related to export of spent fuels.

## 5. INFORMATION FROM MEMBER STATES ON THE IMPLEMENTATION OF THE SHIPMENTS DIRECTIVE

In general, no acute problems were reported in the implementation of the Directive.

Nevertheless, some Member States reported particular concerns which are reported hereafter. However the definition of the radioactive waste<sup>11</sup> is well defined in the Directive, the absence of any harmonisation of clearance levels for waste in the EU leads to the possibility that materials containing radioactive substances are released in one member state but could still be considered as radioactive waste in another member state.

Similar problem is the transboundary shipments of wastes containing naturally occurring radioactive materials (NORM<sup>12</sup> waste) and which are not arising from an authorized practices. These kinds of wastes are excluded from the scope of this Directive but also from the Directive<sup>13</sup> on the management of waste from extractive industries and by consequence escape from any regulatory control.

<sup>10</sup> SNF coming from Serbia and transiting through Hungary and Slovenia with final destination Russia

<sup>11</sup> radioactive waste' means radioactive material in gaseous, liquid or solid form for which no further use is foreseen by the countries of origin and destination, or by a natural or legal person whose decision is accepted by these countries, and which is controlled as radioactive waste by a regulatory body under the legislative and regulatory framework of the countries of origin and destination

<sup>12</sup> Naturally Occurring Radioactive Materials (NORM)

<sup>13</sup> Directive 2006/21/EC of the European parliament and of the Council of 15 march 2006.

The Nuclear Regulatory Agency (NRA) from Bulgaria reported that under the Directive, an application may be sent in respect of more than one shipment subject to the conditions specified in Article 6(2), NRA takes the view that this provision is not applicable to shipments of spent fuel, as the isotopic composition and activity of the consignment are not known until after the shipment has been planned.

## **6. PROBLEMS REPORTED BY MEMBER STATES WHEN USING THE STANDARD DOCUMENT**

According to Article 17 of the Directive, a standard document shall be used for all shipments. This standard document has been made available by Commission Decision<sup>14</sup> of 5 March 2008 in all EU languages.

Following an inconsistency between Council Directive 2006/117/Euratom and the explanatory notes to Commission Decision C(2008) 793 final of 5 March 2008 establishing the standard document for the supervision and control of shipments of radioactive waste and spent fuel referred to in Council Directive 2006/117/Euratom (2008/312/Euratom), a corrigendum was published in the OJ<sup>15</sup> to modify the wording accordingly.

Some Member States reported problems in implementing this standard document.

Austria reported that in one case the description of the waste (A-5) differed in terms of overall activity as well as in terms of the radionuclides from the approved data (A-1). In addition, an inspection of the truck showed that many of the transported radionuclides were neither cited in the application for authorisation of shipment of radioactive waste (A-1) nor mentioned in the description of radioactive waste (A-5).

Belgium reported that sometimes the parts 2 and 3 were received at the same time what makes that it is not clear when the deadline for automatic approval is ending. It is not clear to which competent authority the consignee has to send the confirmation of receipt of the waste or spent fuel and which competent authority has to send it to which other competent authority.

Germany reported that in Section B-1 of the Standard Document it would preferable to rather have the post-irradiation data stated in box 8 instead of the pre-irradiation data and the fuel burn up. The fuel burn up then would be dispensable; pre-irradiation data should be optional supplementary information only.

The Netherlands mentioned that for the benefit of the control of radioactive waste, return shipments should be linked to initial shipments. Examples are cross border treatment of waste (volume reduction, conditioning) and cross border processing of spent fuel. Also in the case of cross border treatment of contaminated scrap metal, it could help to link return shipments of radioactive waste to initial shipments, although initial shipments do not require an authorisation when the metal is shipped as recyclable material. In case of return shipments, information on initial shipments could be included in the standard document (e.g. added to box 11 of section A1).

The United Kingdom reported that it would be beneficial to have streamlined arrangements for waste repatriation. The EC insists that the original approval process is followed when wastes need to be repatriated (taking 3 months). There is a need for countries receiving repatriated wastes to consent to this, but can it be fast tracked?

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<sup>14</sup> Commission Decision of 5 March 2008 establishing the standard document for the supervision and control of shipments of radioactive waste and spent fuel referred to in Council Directive 2006/117/Euratom [Official Journal L 107 of 17.4.2008].

<sup>15</sup> OJEU L 343, 23 December 2011, pp. 149.

The forms don't correlate an export of waste for processing (e.g. metals for recycling) with a subsequent import/repatriation of the residues from that processing. If wastes are exported for recovery, there should be an audit trail to show that residues were returned. This could be achieved by adding a box to the standard form that allows for reference to a previous authorisation/consent, where the application shipment is for the repatriation of residues arising from that previous shipment. Without such a cross-reference, we have no way of establishing if/when the return occurs, or what inventory is repatriated.

Form B-1 (spent fuel) doesn't ask for the levels of radioactivity.

Sweden reported that the interpretation of A-5 box 27 with regard to shipment versus actual transports on vehicles. Their interpretation is that for a series of authorised shipments it is the number of the shipment that is to be given in that box irrespective if that shipment is moved on many vehicles. Some MS has been given numbers which indicate they give the serial number of the actual transport, which then can be much higher than the authorized number of shipments.

These issues will be followed up by the Advisory Committee.

## **7. INFORMATION ON SIGNIFICANT CONDITIONS REQUIRED BY THE MEMBER STATES – EXPORT CRITERIA IMPLEMENTATION**

Austria: in case of shipments through Austria, the Austrian authority grants consent only under the condition of a prior notification 14 days in advance.

Belgium: The carrier(s) have to be in the possession of a valid licence for the transport of radioactive materials on Belgian territory. In case of import: the consignee has to be registered as importer of radioactive waste or spent fuel and are submitted to a license for the use/disposal of radioactive waste or spent fuel. In case of the use of an approved package: this approval must be issued.

Bulgaria: the Nuclear Regulatory Agency grants authorisation for the shipment of SNF to Russia, provided that the applicant has submitted the following documents:

- a certificate/authorisation for shipment and for the design of the packaging, issued by the competent authority of the Russian Federation,
- licence for the importation of SNF, issued to the SNF reprocessing plant by the Federal Technical and Export Control Service of the Russian Federation,
- authorisation for the importation and subsequent reprocessing of SNF, issued to the SNF reprocessing plant by the Federal Ecological, Technological and Atomic Supervision Service of the Russian Federation,
- authorisation for the management of nuclear materials during transport, issued to the SNF reprocessing plant by the Federal Ecological, Technological and Atomic Supervision Service of the Russian Federation,
- licence for the operation of a nuclear facility, issued to the SNF reprocessing plant by the Federal Ecological, Technological and Atomic Supervision Service of the Russian Federation,
- end-user certificate signed by the manager of the SNF reprocessing plant, by means which it is declared that: the SNF will not be used for purposes other than technological storage and reprocessing; the SNF will not be transferred to any other person in Russia or re-exported without the permission of the Federal Ecological, Technological and Atomic Supervision Service of the Russian Federation; the SNF will not be used for purposes that run counter to the NPT or for other military purposes; physical protection at a level no lower than that

recommended by the IAEA has been ensured; the SNF will not be exported outside the jurisdiction of the Russian Federation without the prior consent of the Kozloduy NPP,

- Authorisation for the transit of radioactive material, issued to the Ukrainian carrier for carriage across Ukraine by the State Nuclear Regulatory Committee of Ukraine,
- authorisation for the shipment of radioactive materials, issued to Kozloduy NPP by the National Commission for the Control of Nuclear Activities under the Government of Romania;
- section B-2 of the standard document, signed by the National Commission for the Control of Nuclear Activities under the Government of Romania.

The documents submitted by the applicant indicate that the Russian Federation, and not the exporting Member State as required under the Directive, is responsible for the principal and supplementary criteria set out in the Commission Recommendation of 4 December 2008 on criteria for the export of radioactive waste and spent fuel to third countries.

Cyprus: The shipment of any radioactive source or radioactive waste and spent nuclear fuel between Cyprus and Members States or to and from third countries needs to be licensed in advance. For this purpose, an application in writing shall be submitted to the Radiation Inspection and Control Service, accompanied by all necessary documents and information.

Hungary requested prior approval of physical protection plan of the carrier, according to the Governmental Decree 190/2011 on the physical protection requirements for various applications of atomic energy and the corresponding system of licensing, reporting and inspection.

Latvia: The Radiation Safety Centre of the State Environment Service requires that the operator also take out the relevant licence (permit) in accordance with the laws and regulations in force.

Portugal requires the holder of the spent fuels or radioactive waste to subscribe a liability insurance, which should cover the damages caused to the environment and public health.

The Netherlands: Dutch legislation requires a transport license for the transport (including import and/or export) of “splejtstoffen” (fissile materials + all materials containing a mass percentage of 0.1% uranium, 0.1% plutonium or 3.0% thorium).

In all other cases (radioactive materials above exemption levels), the transport has to be notified 3 weeks in advance. In terms of safety, the transport shall meet the requirements of the relevant international modal regulations (no additional national safety requirements).

Romania requests an authorised carrier, an import/export licence in case of spent nuclear fuel; the approved physical protection plan in case of spent nuclear fuel and authorised type approval of package for AF, IPF, B(U), B(U)F, B(M), B(M)F.

## **8. INFORMATION ON SIGNIFICANT CASES OF REFUSAL TO GIVE AUTHORISATION/CONSENT**

In most Member States, there were no cases of refusal to grant authorisation for the transboundary shipment of radioactive waste or spent fuel during the 2008-2011 period. However, only 2 Member States reported denials

Austria: only one shipment of natural radioactive residues has been denied by the Austrian authority because naturally occurring radioactive material, which does not arise from practices, is excluded from the scope of the Directive

Belgium: Belgian has refused one case: an import of radioactive waste coming from UK for incineration into a Belgian installation. The reason for this refusal was that no formal government agreement is in place for the treatment of this waste in Belgium and the consignee was not registered as an importer of radioactive waste from UK

## **9. CROSS CHECK INFORMATION**

Beside the "Waste Directive" and the "Shipment Directive" (SD), the Joint Convention on the Safety of Spent Fuel and on the Safety of Radioactive Waste Management has also be considered in this report as it has become a significant contributor setting the principles for the management of radioactive waste and spent fuel in the EU.

As reminder the objectives of this Convention are

- (a) to achieve and maintain a high level of safety worldwide in spent fuel and radioactive waste management, through the enhancement of national measures and international co-operation
- (b) to ensure that during all stages of spent fuel and radioactive waste management there are effective defences against potential hazards so that individuals, society and the environment are protected from harmful effects of ionizing radiation, now and in the future, in such a way that the needs and aspirations of the present generation are met without compromising the ability of future generations to meet their needs and aspirations;
- (c) to prevent accidents with radiological consequences and to mitigate their consequences should they occur during any stage of spent fuel or radioactive waste management.

The implementation of the Joint Convention (JC) and in particular its article 27 requires Member States to report about the transboundary movements and export of waste and spent fuels.

In the reporting from the Member States, the Commission also notes an overall consistency and complementarity with the National Reports under the Joint Convention on the Safety of Spent fuel Management and on the Safety of Radioactive Waste Management as those reports describe mainly the legal framework and responsibilities.

Reported information under the JC art.27 and SD art.15 from Member States are given in the annex 2.

## **10. CONCLUSIONS**

The Shipments Directive has been successfully transposed in all EU Member States. The general provisions under the Directive have been implemented through the adoption and publication of the relevant Commission Decision and Recommendations and the creation of the Advisory Committee.

After having assessed the information provided by the Member States in their first reporting exercise, the Commission notes that the Directive is now being fully implemented so as to guarantee an adequate protection of the population. It provides a well-structured and operational framework for the supervision and control of shipments in all Member States, ensuring that transboundary shipments of radioactive waste and spent nuclear fuel take place only with the prior informed consent of the competent authorities of all the Member States involved.

The implementation of the Shipments Directive has not given rise to any major problems. The issue of NORM waste and clearance levels in the context of the shipment of radioactive waste has been identified and will be further followed-up by the advisory committee established under this Directive.

As regards the shipments of radioactive wastes and spent fuel, the Commission notes that the existing national provisions, notably those implementing the Directive laying down basic safety standards for the protection of the health of workers and the general public against the dangers arising from ionising radiation allow the national competent authorities to monitor the movements of these shipments on their territory.

## **ANNEX 1**

### INFORMATION FROM MEMBER STATES ON THE TRANSPOSITION OF THE DIRECTIVE

#### **AUSTRIA**

Legal act: Verordnung, number: II Nr. 47/2009; Official Journal: Bundesgesetzblatt für die Republik Österreich (BGBl.), number: II Nr. 47/2009, Publication date: 18/02/2009, Entry into force: 19/02/2009; Reference: (MNE(2009)51176).

#### **BELGIUM**

The Directive was transposed by the Royal Decree of 24th of March 2009 concerning import, transit and export of radioactive substances and entered into force on the 27th of April 2009 or 10 days after its publication into the Belgian law gazette.

#### **BULGARIA**

Council Directive 2006/117/Euratom of 20 November 2006 on the supervision and control of shipments of radioactive waste and spent fuel was transposed in December 2008 by means of an order of the President of the Nuclear Regulatory Agency, and its implementation was notified to the European Commission. The rules laid down were enshrined in law with the entry into force of the Act amending the Act on the safe use of atomic energy.

#### **CYPRUS**

The Directive 2006/117/Euratom is implemented by the Protection from Ionising Radiation (Supervision and Control of Shipment of Radioactive Waste and Spent Fuel) Regulations of 2009 under the Protection from Ionising Radiation and Nuclear Safety Laws of 2002 to 2011.

#### **CZECH REPUBLIC**

The provisions of Section 10 of the Decree No. 317/2002 Coll.\* as amended by the Decree No. 73/2009 Coll. and Government Regulation 73/2009 Coll. concern especially international shipments of the radioactive waste and spent fuel and they are fully compatible with: the Council Directive 2006/117/EURATOM of 20 November 2006 on the supervision and control of shipments of radioactive waste and spent fuel and the Commission decision 2008/312/Euratom of 5 March 2008 establishing the standard document for the supervision and control of shipments of radioactive waste and spent fuel referred to in Council Directive 2006/117/Euratom.

#### **DENMARK**

Danish Order No. 1175 on International Shipments of Radioactive Waste and Spent Fuel, of 11th December, 2008 – which took effect on the 25th of December, 2008 - fully implements the Directive.



## **ESTONIA**

Legal act: seaduse parandus, number: RT I 2004, 26, 173; Official Journal: Elektrooniline Riigi Teataja, number: RT I 2004, 26, 173, Entry into force: 14/10/2009; Reference: (MNE(2009)54292).

Procedure Specifications for Processing Documents of Import, Export and Transit of Radioactive Waste Based on Country of Origin and Destination.

Legal act: Vabariigi Valitsuse määrus, number: RT I 2004, 57, 406; Official Journal: Elektrooniline Riigi Teataja, number: RT I 2004, 57, 406, Entry into force: 26/12/2009.

## **FINLAND**

The Directive 2006/117/Euratom (Supervision and Control of Shipment of Radioactive Waste and Spent Fuel) is implemented by Nuclear Energy Act 990/1987 (amendments 342/2008, which entered into force 1.8.2008), Nuclear Energy Decree 161/1988 (amendment 732/2008, in force since 1.12.2008) and Radiation Act 592/1991 (amendment 718/2008 in force since 1.12.2008).

## **FRANCE**

The above-mentioned Council Directive 2006/117/EURATOM of 20 November 2006 was transposed into national law by a regulatory-level text: Decree No 2008-1380 of 19 December 2008 on the procedures applicable to cross-border shipments of radioactive waste and spent nuclear fuel, published in the Official Journal of the French Republic on 24 December 2008. In accordance with Article 23 of Directive 2006/117/EURATOM, the repeal of Directive 92/3/EURATOM took effect on 25 December 2008.

## **GERMANY**

In Germany Directive 2006/117/Euratom has been implemented into national law by the “Verordnung über die Verbringung radioaktiver Abfälle oder abgebrannter Brennelemente (Atomrechtliche Abfallverbringungsverordnung – AtAV) as of 30. April 2009.

## **GREECE**

The Directive was transposed into the Greek legislative framework in September 2010: Government Gazette, Presidential Decree No.83, Folio No.147, First Issue, September 3, 2010 “Transposition of Council Directive 2006/117/Euratom of 20 November 2006 on the supervision and control of shipments of radioactive waste and spent fuel”.

## **HUNGARY**

In Hungary the Council Directive 2006/117/Euratom of 20 November 2006 on the supervision and control of shipments of radioactive waste and spent fuel was transposed by Governmental Decree 34/2009. (II. 20.) on the approval of transboundary shipments of radioactive waste and spent fuel.

## **ITALY**

The Directive 2006/117/Euratom has been implemented into the national legislative framework by the Legislative Decree 20 February 2009, No.23, published in the Official Gazette No.68 of 23 March 2009.

## **IRELAND**

Legal act: Statutory Instrument (Regulation or Order), number: 86 of 2009; Official Journal: Iris Oifigiúil, Publication date: 24/03/2009, Entry into force: 19/03/2009; Reference: (MNE(2009)51310).

## **LATVIA**

The requirements of Council Directive 2006/117/Euratom of 20 November 2006 on the supervision and control of shipments of radioactive waste and spent fuel (hereafter Directive 2006/117/Euratom) have been transposed into Latvian legislation.

-The Law "On radiation safety and nuclear safety"

-Cabinet Regulation No 129 of 19 March 2002 on "Requirements for operations with radioactive waste and materials related thereto"

-Cabinet Regulation No 723 of 20 September 2011 on "Procedures for licensing activities with ionizing radiation sources"

In compliance with the requirements of Directive 2006/117/Euratom and Latvian legislation, a system has been established for shipments of radioactive waste and spent fuel between the Member States of the European Union and outside the EU.

The Law "On radiation safety and nuclear safety" states that the import of radioactive waste and spent fuel into the Republic of Latvia is prohibited.

The Radiation Safety Centre of the State Environment Service (VVD RDC) is the competent authority responsible for the introduction of the supervision and control system of radioactive waste and spent fuel shipments.

## **LITHUANIA**

The Directive 2006/117 was fully transposed to the Regulations on Import, Export, Transit and Transportation inside the Republic of Lithuania Radioactive Materials, Radioactive Waste and Spent fuel approved on 24 December 2008 by joint order of the Minister of Health and Acting head of State Nuclear Power Safety Inspectorate (VATESI).

## **LUXEMBOURG**

Council Directive 2006/117/EURATOM of 20 November 2006 has been implemented by the adoption of Grand-ducal regulation of 3 march 2009 on the supervision and control of shipments of radioactive waste and spent fuel.

The regulatory body in charge of the implementation is the Radiation Protection Department (Division de la Radioprotection), placed under the authority of the Health Directorate of the Ministry of Health.

### **MALTA**

Legal act: Regulation, number: LN48/09; Official Journal: The Malta Government Gazette, number: 18378, Publication date: 13/02/2009, Page: 00515-00634; Reference: (MNE(2009)50776).

### **THE NETHERLANDS**

The implementation in Dutch legislation of the Directive was completed at April 15th, 2009. The implementation required a change of the “Decree on the import, export and transit of radioactive waste” that was based on the preceding 92/3 Directive. The new “Decree on the import, export and transit of radioactive waste and spent fuel” entered in to force at April 15th, 2009.

### **POLAND**

The Council Directive 2006/117/EURATOM of 20 November 2006 on the supervision and control of shipments of radioactive waste and spent fuel, which lays down a Community system of supervision and control of transboundary shipments of radioactive waste and spent fuel, so as to guarantee an adequate protection of the population, entered into force on 25 December 2006. Transposition period for implementation of the Directive into national regulatory framework came to a close on 24 December 2008. The Directive is implemented to the Act of Parliament on Atomic Law of 29 November 2000 (amendment in 2008) and Regulation of the Council of Ministers of 21 October 2008 on granting an authorization and consent to import onto the territory of the Republic of Poland, export from the territory of the Republic of Poland and transit through that territory of radioactive waste and spent nuclear fuel.

### **PORTUGAL**

The Ministry of Science, Technology and Higher Education transposing into national law the Council Directive n° 2006/17/Euratom of 20 November on the supervision and control of shipments of radioactive waste and spent fuel, and repealing Decree-Law n° 138/96 of 14 August.

Legal act: Decreto-Lei, number: 198/2009; Official Journal: Diaro da Republica I, number: DR n.º 165, Publication date: 26/08/2009, Page: 05614-05629; Reference:(MNE(2009)53677)

### **ROMANIA**

The council Directive 2006/117/Euratom has been transposed by Order of CNCAN President 443/2008 on the approval of Regulations on the supervision and control of international shipment of radioactive waste and spent nuclear fuel involving Romanian territory, and published in official Bulletin of Romania Part I no. 797 / 27.11.2008.

### **SLOVAK REPUBLIC**

Act No 408/2008 of 18 September 2008 entered into force on 25 December 2008, amending Act No 541/2004 (the Atomic Act) for the purpose of transposing Council Directive 2006/117/Euratom of 20 November 2006 on the supervision and control of shipments of radioactive waste and spent fuel ('the Directive') into Slovak law.

As regards the format and the correct completion and use of the standard document, Act No 408/2008 contains a direct reference to Commission Decision 2008/312/Euratom of 5 March 2008 establishing the standard document for the supervision and control of shipments of radioactive waste and spent fuel referred to in the Directive.

This report is submitted in accordance with Article 20(1) of the aforementioned Directive and pursuant to Section 16a(4) of Act No 408/2008.

## **SLOVENIA**

Legal provisions of the Council Directive 2006/117/Euratom were transposed into Slovenian legislation by the Ionizing Radiation Protection and Nuclear Safety Act (Official Gazette of Republic of Slovenia No. 102/04 - official consolidated text, 70/2008-ZVO-1B and 60/2011) and by the Rules on transboundary shipments of radioactive waste and spent fuel (Rules JV11; Official Gazette of Republic of Slovenia No. 22/2009) which came into force on 24. 3. 2009. The Rules also implement the Commission Decision 2008/312/Euratom of 5 March 2008 establishing the standard document for the supervision and control of shipments of radioactive waste and spent fuel referred to in Council Directive 2006/117/Euratom. The use of Commission Recommendation of 7 July 2009 for a secure and effective system of transmission of documents and information relating to the provisions of Council Directive 2006/117/Euratom is respected in all cases where Slovenia applies Directive 2006/117/Euratom. Unofficial translation of the Rules JV11 into English language was prepared in February 2011 and is published on an official Slovenian Nuclear Safety Administration (SNSA) website.

## **SPAIN**

Royal Decree 243/2009 of 27 February, which regulates the supervision and control of shipments of radioactive waste and nuclear spent fuel between Member States or from or to the outside of the Community.

Legal act: Real Decreto, number: 243/2009; Official Journal: Boletín Oficial del Estado ( B.O.E ), number: 80/2009, Publication date: 02/04/2009, Page: 31231-31269, Entry into force: 03/04/2009; Reference: (MNE(2009)51493).

## **SWEDEN**

Regulation (2009:119) about amending the Regulation (1984:14) on nuclear activities / Legal act: Förordning; Official Journal: Svensk författningssamling (SFS), number: 2009:119, Entry into force: 01/04/2009; Reference: (MNE(2009)51343).

Law on amending the Act on nuclear activities (1984:3) / Legal act: Lag; Official Journal: Svensk författningssamling (SFS), number: 1984:3, Entry into force: 01/06/2009; Reference: (MNE(2009)51345).

The Radioaction Protection Act (1988:220) / Legal act: Lag; Official Journal: Svensk författningssamling (SFS), number: 1988:220, Entry into force: 01/01/1999; Reference: (MNE(2009)51346).

Law on amending the Radiation Protection Act (1988:220) / Legal act: Lag; Official Journal: Svensk författningssamling (SFS), number: 1988:220, Entry into force: 01/06/2009; Reference: (MNE(2009)51347).

Radiation Protection Regulation (1988:293) / Legal act: Förordning; Official Journal: Svensk författningssamling (SFS), number: 1988:293, Entry into force: 01/04/2009; Reference: (MNE(2009)51341).

Law on nuclear activities (1984:3) / Legal act: Lag; Official Journal: Svensk författningssamling (SFS), number: 1984:3, Entry into force: 01/01/1999; Reference: (MNE(2009)51344).

Regulation on amending the Regulation (1984:14) on nuclear activities / Legal act: Förordning; Official Journal: Svensk författningssamling (SFS), number: 2008:456, Entry into force: 01/07/2008; Reference: (MNE(2009)51342).

Radiation Safety Authority's Regulations (SSMFS 2009:1) on the control of transboundary transports of radioactive waste and spent fuel / Legal act: Föreskrift; Official Journal: Other, number: 2009:1, Entry into force: 01/04/2009; Reference: (MNE(2009)51355).

## **UNITED KINGDOM**

The Directive was transposed by the Transfrontier Shipment of Radioactive Waste and Spent Fuel Regulations 2008 / Legal act: Statutory instrument (SI), number: SI 2008 No. 3087; Official Journal: Her Majesty's Stationery Office (HMSO), number: SI 2008 No. 3087; Reference: (MNE(2009)50590).

## ANNEX 2

### **DECLARATION RELATIVE TO ARTICLE 27 OF THE JOINT CONVENTION (JC) AND ARTICLE 15 OF THE SHIPMENT DIRECTIVE (SD)**

In the reporting from the Member States, the Commission also notes an overall consistency and complementarity with the National Reports under the Joint Convention on the Safety of Spent fuel Management and on the Safety of Radioactive Waste Management as those reports describe mainly the legal framework and responsibilities.

Reported information under the JC art.27 and SD art.15 from Member States are:

#### **AUSTRIA**

-On the basis of the Austrian Federal Constitutional Act on a “Non-Nuclear Austria” Austria explicitly prohibits any transport of fissile material from the production of nuclear energy (art 27).

-No export outside the EU of waste or spent fuels reported (art 15).

#### **BELGIUM**

-The data provided by Belgium are exhaustive and well detailed in both reports.

-No export outside the EU of waste or spent fuels reported (art 15).

#### **BULGARIA**

-It is noted that the Republic of Bulgaria has experience only as a State of origin of spent nuclear fuel. Presentation is made of the international agreements related to receiving of SF for processing on behalf of the Russian Federation, and its transit through the territory of the Ukraine (art 27).

-1 additional shipment in Oct 2011 – all mentioned shipments are also transiting through Romania (art 15).

#### **CYPRUS**

-Very small amounts of radioactive waste produced in research activities are kept in storage for licensed disposal or shipment abroad. A condition imposed to the licensees during the licensing procedure is to return back to the supplier/manufacturer, outside Cyprus, any disused source. In addition, all scrap metals exported to various countries are checked for radioactivity before shipment (art 27).

-No export outside the EU of waste or spent fuels reported (art 15).

#### **CZECH REPUBLIC**

-Both reports are identically the same.

-In the Czech Republic; there have been no activities concerning the export of radioactive waste and spent fuel to third countries (art 15).

## **DENMARK**

-The National Institute of Radiation Protection has in the period from the last Review Meeting consented 17 transboundary movements between EU-countries, but only with Denmark as a country of transit (art 27).

-No export outside the EU of waste or spent fuels reported (art 15).

## **ESTONIA**

-Both reports are identically the same.

-No export outside the EU of waste or spent fuels reported (art 15).

## **FINLAND**

-There have been few cases of transboundary movements. In 2008–2010 two spent fuel rods were shipped out of Finland for research purposes (art 27).

-No export outside the EU of waste or spent fuels reported (art 15).

## **FRANCE**

-Transboundary movements of spent fuel and radioactive waste between France and third-party countries involve mainly spent-fuel processing operations, that are performed at the La Hague Plant on behalf of Belgian, Dutch, German, Italian, Japanese and Swiss customers. Most transboundary movements between European countries are made by rail. Sea routes are used for Japan bound shipments, since suitable port infrastructures meeting the required nuclear-safety level have been built at both ends of the itinerary. No significant incident compromising safety, security or radiation protection has been notified in recent years during those shipments (art 27).

-4 authorisations for export outside the EU- China, Switzerland and USA (art 15).

## **GERMANY**

-National Report describes legal framework and responsibilities, but does not explain how many shipments there were. As there is yet no repository available for the spent fuel, it will be stored intermediately at the sites where it was generated; corresponding storage facilities exist as needed. Usually, the spent fuel from research reactors will be returned to its country of origin. In addition to German facilities, facilities in other European foreign countries are also utilised for waste management. Radioactive waste generated from the operation of nuclear installations is delivered to Sweden for conditioning and subsequently returned to Germany. Waste from the reprocessing of spent fuel from German power reactors is conditioned in France and the United Kingdom (e.g. vitrification of the high-level fission product solutions)

and are then also returned to Germany. Furthermore, they [the producers] are also responsible for the safe management of the radioactive waste resulting from the reprocessing of German spent fuel in France and the United Kingdom following its return, which Germany is under obligation to accept (art 27).

- Germany reported 7 exports of waste and of spent fuels to Switzerland and USA (art 15).

## **GREECE**

-Greece has no nuclear power plants. Spent fuel management is therefore relevant only in connection with the operation of the unique research reactor GRR-1 at the National Centre of Scientific Research (NCSR) “Demokritos” and of two small subcritical assemblies. The policy and practice for spent fuel management for GRR-1 is to temporarily store the fuel elements in dedicated storage facilities, awaiting transfer to USA jurisdiction, according to an agreement with the US Department of Energy for shipment until 2019. All future fuel purchases will be based on similar arrangements with foreign nuclear companies/organizations that will guarantee the return of spent fuel to the country of origin for storage or reprocessing.

-Spent fuel from the reactor has been returned to the United States in 1996 and 2005 (art 27).

-No export outside the EU of waste or spent fuels reported (art 15).

## **HUNGARY**

-Paks NPP: In the course of the elaboration of the strategy for the closure of the fuel cycle it is worthwhile to examine various possibilities, including the shipment of spent fuel abroad. In principle, this latter is a possible option due to the protocol on conditions concerning the reshipment to the Russian Federation of Russian-made spent fuel assemblies signed on 29 April 2004 by the Government of the Republic of Hungary and the Government of the Russian Federation. That future decision should be based on technical, economical, political, social considerations and also on achievable guarantees at intergovernmental level.

-If requested, Hungarian manufacturers take back radioactive sources produced by them from users within the country or abroad. These sources are either re-manufactured or disposed of in the Radioactive Waste Treatment and Disposal Facility at Püspökszilágy. The legislative system does not prevent Hungarian manufacturers from fulfilling such obligations. In recent practice, numerous such obligations have been undertaken, and re-shipments take place regularly (art 27).

-No export outside the EU of waste or spent fuels reported (art 15).

## **IRELAND**

-The transfer of radioactive sources or waste from Ireland to other countries is limited to the return of disused sources to the suppliers or to the transfer of disused sources to an overseas waste management facility (art 27).



-No export outside the EU of waste or spent fuels reported (art 15).

## **ITALY**

-For export of spent fuel in non EU countries the Council Regulation (EC) n° 1334/2000, setting up a Community regime for the control of exports of dual-use items and technology, is applied. In that case an authorization for export is issued by the Italian competent authority (Ministry of Economic) on the basis of a declaration of the consignee endorsed by the State of destination (art 27).

-Approval of shipments to third countries are issued on the basis of the criteria established by the European Commission and according with the advice of the Ministry of Foreign Affairs and with the technical advice of ISPRA.

-No export outside the EU of waste or spent fuels reported (art 15).

## **LATVIA**

-Return to the supplier of the spent fuel from Latvia had been done in the frame of the IAEA-Latvia-Russia Project. The spent fuel has been moved out of Latvia in 2008 in accordance with internationally agreed practice – return to the supplier (art 27).

-The export criteria for radioactive waste and spent fuel that are referred to in Article 16 of Directive 2006/117/Euratom have been adopted in Latvia in Cabinet Regulation No 129 of 19 March 2002 "Requirements for operations with radioactive waste and materials related thereto".

-So far no export shipments of radioactive waste in accordance with Directive 2006/117/Euratom have occurred in Latvia. In the event of an export permit being requested from the Radiation Safety Centre of the State Environment Service, the criteria specified in Directive 2006/117/Euratom and Commission Recommendation of 4 December 2008 on criteria for the export of radioactive waste and spent fuel to third countries (2008/956/Euratom) will be evaluated.

-In addition to the requirement to fulfil the conditions specified in the above mentioned documents, VVD RDC will require that the operator also take out the relevant licence (permit) in accordance with the laws and regulations in force (currently Cabinet Regulation No 723 of 20 September 2011 on "Procedures for licensing activities with ionizing radiation sources") (art 15).

## **LITHUANIA**

-It is forbidden to import radioactive waste. It is possible only in case if source was produced in Lithuania and is being returned for final disposal. But at present there are no manufacturing or reprocessing practices here in Lithuania and consequently disused sealed sources are not imported. It is foreseen in the legal acts of the country, that consignor of radioactive waste and spent nuclear fuel shall take back the waste, if the shipment cannot be finished or if the conditions for the shipment are not fulfilled. Appropriate state authorities control, that radioactive waste and spent nuclear fuel is returned to the holder in Lithuania, and in cases, if the radioactive waste is shipped from the non EU Member State to the Republic of Lithuania, it is controlled, that the consignee of the waste agrees with waste holder, who is in the country

non EU Member State, on his responsibility to take back the waste, if it is not possible to carry out its shipment. Yet there were no such cases in the practice (art 27).

-Since the Regulations were approved, none of applications for the shipment of radioactive waste or spent fuel were submitted to Radiation Protection Centre - a competent authority on the supervision and control of shipments of radioactive waste or VATĚSI (art 15).

### **LUXEMBOURG**

-During the recent years, the amount of waste and disused sources stored in Luxembourg has been reduced. At the licensee's side this is due to the fact that some facilities have stopped using radioactive sources and returned all disused sources to the suppliers. The reduction at the NISF has been achieved by systematically organizing transfers to Belgium (art 27).

-No export outside the EU of waste or spent fuels reported (art 15).

### **THE NETHERLANDS**

-Under the "Off-site Fuels Policy", which expired in 1988 for HEU fuel, the United States accepted foreign research reactor fuel. Consequently, up to that year the research reactors in the Netherlands sent their spent fuel back to the US. Also in later years occasional shipments with spent nuclear fuel to the US have taken place. This fuel will not be returned to the Netherlands (art 27).

-No export outside the EU of waste or spent fuels reported (art 15).

### **POLAND**

-Shipments of the SNF to the Russian Federation, which have been described in more detail in Sections B and D of the Report, have been performed in accordance of the prevailing international and State regulations (see Annexes 5, 6 and 7) (...).

-It has been recently agreed, that spent fuel shipment to Russian Federation will cover EK-10 fuel (LEU). These option is not financed by US-DOE under GTRI and appropriate funding shall be provided by Polish Government (...).

-Information on planned activities or official findings on the shipment of spent LEU-type nuclear fuel EK-10, derived from the research reactor EWA, to Russian Federation.

-In 2009, in the frames of GTRI-RRRFR Program, an agreement was signed with the United States of America and the Russian Federation for the permanent removal and shipment of HEU-type spent nuclear fuel from the research reactors to Russian Federation. Due to the analyses both sides agree that in case of Poland, the Agreement with the Russian Federation gives possibility to ship to Russian Federation also the low-enriched fuel EK-10. In September 2011 Poland, Russian Federation and the USA agreed for : transport of EK-10 will take place in 2012, cost of transportation will be covered by the USA, to the end of this year Poland and Russian Federation will agree upon the financial conditions of the contract.

-Global Threat Reduction Initiative – Russian Research Reactors Fuel Return Program In accordance with the Global Threat Reduction Initiative, transport of HEU-type spent nuclear fuel to the Russian Federation was carried out. The shipment program was prepared by Interministerial Team for Coordinating Tasks Connected with the Performance by the Republic of Poland of „the International Research Reactor Fuel Return Program supplied by Russia” established by virtue of the Decree No 132 of the Prime Minister as of 14 November 2007. The said team was led by the President of National Atomic Energy Agency. The program started to be executed in 2009. In the last 2 years (2009-2010) there were 5 shipments of highly enriched (i.e. exceeding 20% U-235) spent nuclear fuel from Polish research reactors EWA and MARIA. The direct responsibility for transport rested with the Radioactive Waste Management Plant, whereas the NAEA President granted authorizations regarding shipments and supervised their execution.

-In 2009, the first shipment of spent fuel to the Russian Federation has been held, followed by 4 transports in 2010. The NAEA President on the basis of documentation provided by the Radioactive Waste Management Plant issued in 2010 a series of authorizations concerning carriage of spent fuel. The said licenses included among others the quantity and specification of shipped fuel and were issued in accordance with the Regulation of the Ministers’ Council of 21 October 2008 on Licensing the Carriage of Radioactive Waste and Spent Nuclear Fuel in the Territory of the Republic of Poland and Transit Across this Territory. Each operation of loading and transport of spent fuel was supervised by the NAEA nuclear regulatory inspectors and the results of inspection confirmed absolute safety of those operations. All the shipments were performed on schedule and with no disturbances. In December 2010 the NAEA President submitted to the Prime Minister a report on the activities of Interministerial Team, thus by the end of 2010 the Team finished its work. Due to the fact that MARIA reactor is still operating with the use of 36% enriched fuel (HEU), it is expected that the shipment of this fuel to the Russian Federation will take place in the following years, after the expiry of a period which is necessary for fuel cooling (art 27).

-Poland implemented all criteria and conditions required by the Directive. There were no additional conditions required by the Polish regulatory framework except those, which arise from Article 27 of the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management, the Convention on the Physical Protection of Nuclear Material, IAEA Regulations for the Safe Transport of Radioactive Material TS-R-1 and the international modal transport Regulations.

-5 authorisations for spent fuels exportation to Russia reported (art 15).

## **PORTUGAL**

-In 1999, in the context of international initiatives to enhance non-proliferation measures, safeguards and nuclear security and to combat nuclear terrorism, Portugal declared its interest in participating in the “United States Foreign Research Reactor Spent Nuclear Fuel Acceptance Program” of the Department of Energy of the United States of America (DoE/USA). The Portuguese Government committed to abandoning the use of highly

enriched uranium (HEU) by 12th May 2006 (deadline that shifted to 31st May 2007) and to return all HEU fuel, fresh and spent, before 12th May 2009.

-On 20th December 2006 an agreement to carry out the project was signed in Vienna, between the International Atomic Energy Agency (IAEA), Portugal and the USA, which foresaw IAEA technical support and United States financial assistance.

-The RPI received fresh LEU fuel in early 2007, from the French supplier CERCA (AREVA Group). The reactor conversion, from HEU to LEU (with less than 20% of U-235 – specifically, U3Si2-Al – and a uranium density of 4.8 g/cm<sup>3</sup>), was performed in September 2007. The RPI achieved full power with LEU fuel in October 2007.

-The ITN then prepared the shipment of the HEU fuel, and performed radiological shielding calculations for the optimization of the spent fuel loading into the transport cask. Some fresh HEU assemblies were returned in the same transport cask. The fresh and irradiated assemblies (ca. 7 kg U-235, initial value) were returned in July 2008 to the USA.

-The LEU fuel currently in use will also be returned to the USA. Portugal does not have high-level radioactive waste and does not require any activities concerning handling or storage of spent fuel, other than interim storage in the pool of the RPI before shipment to the USA (art 27).

-No export outside the EU of waste or spent fuels reported (art 15).

## **ROMANIA**

-Romania has adhered to the USA Government policy with respect to return to the country of origin the HEU type spent fuel in American research reactors abroad. According to the agreement signed by Romania, in 2006, all the HEU type fuel has been removed from the SSR. This fuel was returned to USA. The first shipment to USA of HEU spent fuel has been performed in 1999 and the second in July 2008, thus all HEU type fuel has been repatriated in USA (art 27).

-3 shipments (authorised by Bulgaria) involving Romanian territory (export of SNF to Russia) (art 15).

## **SLOVAK REPUBLIC**

-ÚJD SR issued authorization for shipment of spent nuclear fuel from a research reactor in the Czech Republic to the Russian Federation within the US initiative - Global Threat Reduction Initiative. All transboundary shipments of spent nuclear fuel were made on the basis of consents and authorizations from the relevant regulatory and administrative authorities of the State of Origin after notification to the State of destination and with its consent. In 2009 ÚJD SR issued authorization for shipment of metal radioactive waste from the Slovak Republic to the Russian Federation for the purpose of its processing (melting) and subsequent import of the melting products back to the Slovak Republic. The shipment has not been realized until now due to not meeting all the conditions imposed on the applicant. The communication

process between the authorities of the affected countries took place in compliance with the amended Atomic Act (No. 541/2004 Coll. 1.) and the relevant standard documents were used (art 27).

-The UJD issued authorization for shipment of spent nuclear fuel mentioned in the National report before 25 December 2008. It means that the shipment was out of the reporting period required by Directive. The spent nuclear fuel shipment mentioned in the National report was the last shipment of spent fuel carried out as a transit through the territory of the Slovakia up to now (art 15).

## **SLOVENIA**

-In the framework of the United States and Russian research reactor spent fuel return programmes three transits and one export of own spent fuel were accomplished on the territory of the Republic of Slovenia before 2008. However, from 2008 the activities were intensified.

-In 2008 three permits were issued for the transit of nuclear fuel through Slovenia.

-At the end of July 2008, a road transport of irradiated fuel elements from Romania took place from Dolga vas to the Port of Koper. The cargo was loaded on a ship and transported to the USA. On the same vessel, bound for the USA, another shipment was loaded, namely non-irradiated enriched uranium. This road shipment derived from Italy.

-In the middle of September 2008, a rail transport of irradiated fuel elements, either high- or low-enriched, from a Hungarian research reactor was accomplished. The containers with transfer casks were loaded on a vessel and the consignment continued its journey to the Russian Federation.

-In 2009, no transit permits were issued.

-In 2010 one permit was issued for the transit of irradiated high- or low-enriched fuel elements. The shipment was carried out in November 2010. The rail transport between the Slovenian-Hungarian border and the Port of Koper was followed by loading the containers onto a vessel that travelled across the Mediterranean Sea and the Atlantic Ocean to the port of Murmansk (north of the Russian Federation).

-Besides these occasional transits there is approximately every three years a shipment of radioactive waste from the Krško NPP sent for incineration and melting to one of the EU Member States. The last shipment was sent in December 2008 and was returned to the Krško NPP in November 2009 (art 27).

-Slovenia does not export any radioactive waste or spent fuel since return of research reactor spent fuel to USA prior to Slovenian membership in EU (art 15).

## **SPAIN**

-The Spanish experience of transboundary movements during the period considered has consisted of transfers of low and intermediate level radioactive wastes, with Spain being the

destination. Specifically, radioactive wastes from the inspection and decontamination of the hydraulic circuit of reactor coolant pump circuits and four motors at Spanish nuclear power plants have been received. One such shipment has already been carried out applying the procedure established in Royal Decree 243/2009.

-Furthermore, in 2009, 3 shipments of irradiated fuel rods were sent from the Almaraz and Vandellós II nuclear power plants to the hot cell laboratories of CEA (France) and Studsvik (Sweden), within the framework of a research programme aimed at the study of various properties of cladding materials. These transport operations were carried out in compliance with all the obligations established in the national and international standards on the transport of hazardous goods and the physical protection of nuclear materials (art 27).

-No export outside the EU of waste or spent fuels reported (art 15).

### **SWEDEN**

-Studsvik Nuclear AB carries out volume reduction of radioactive waste on a commercial basis, by incineration of combustible waste and melting of scrap metal. The activities are to a certain extent based on services to companies abroad, and Studsvik imports radioactive waste and scrap metal for the purpose of volume reduction. The remaining radioactive waste is re-exported to the country of origin. Approximately one hundred transboundary shipments of this kind is carried out each year (art 27).

-4 authorisations covering exports to Japan, Switzerland and Norway reported (art 15).

### **UNITED KINGDOM**

-In 2010 the UK carried out the first shipments of high-level vitrified waste to Sellafield's overseas reprocessing customers. The first shipments were to Rokkasho, Japan and to COVRA in the Netherlands. The programme will last about 10 years. All shipments were carried out under the Shipments Directive. Since 2007 the UK has been exporting metallic wastes from nuclear decommissioning for treatment by the metal-melt process. Shipments have been made to Sweden, Germany and the USA. The metal is mostly carbon steel, but alloy steels and lead have also been treated and recycled. The European companies engaged in these recycling processes repatriate the radioactive furnace slag and other process wastes to the UK. As the metal is recycled, the volume reduction on radioactive wastes requiring disposal to the UK's national Low Level Waste Repository is greater than 10:1. This is an ongoing international trade. Small numbers of shipments have been made for other treatments and processes, including incineration. The quantities of oil and other combustible wastes involved are generally low, as most combustible wastes are dealt with at UK facilities (art 27).

-4 authorisations covering exports to Japan and USA reported (art 15).