

## Activities of the European Union in the Field of the Safe Transport of Radioactive Material

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The creation of the European Single Market on January 1, 1993, has had an impact on the field of international trade. This paper describes the current situation relating to the transport of radioactive materials within the European Union and emphasizes the effect of the European Single Market in this field.

### Institutions of the Community

The European Union (EU) is made up of 15 Member States: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, Sweden, and the United Kingdom. The legislative and administrative work of the EU is conducted in four main institutions:

- Central administration is conducted by **The Commission of the European Communities**. The Commission is responsible for proposing legislation. It ensures observance of Union rules and implements some decisions taken by the Council of Ministers within limits laid down by the Council. The 24 Directorates-General (DGs) cover specific policy areas such as energy and the environment; the DGs are headed by 20 Commissioners appointed by their Member States and are staffed by civil servants in the Commission Services.
- **The Council of Ministers**, under Article 189 of the Treaty of Rome, may make regulations, issue directives, take decisions, make recommendations, and deliver opinions. It meets in specialist forms, each composed of relevant Ministers from national governments, e.g., the Transport Council is attended by Transport Ministers. There are usually two formal meetings of each Council during every 6-month Presidency, and in some cases also one informal meeting; the former can make legislation but not the latter. A separate body is the 6-monthly European Council or "summit" of Heads of Government, Foreign Ministers, and the President of the Commission, which does not take legislative decisions.
- **The European Parliament (EP)** has 626 members and is directly elected every 5 years. The EP has limited powers. It exercises some control over the Budget, with power to reject and amend drafts. With the "cooperation procedure"

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introduced by the Single European Act, certain legislation is given a second reading in the Parliament, in particular, Single Market legislation. The Parliament also has powers—never used—to dismiss the Commission as a whole (but not individual Commissioners). The Maastricht Treaty allows further power under the “negative assent procedure” by which the Parliament gives a third reading and can reject legislation.

- **The European Court of Justice (ECJ)** judges cases involving the interpretation of EC law referred to it by the Commission, Member States, national courts, and, in certain circumstances, individuals. EC law always takes precedence over national law in cases of conflict, so the jurisprudence of the ECJ is one of the most important areas of Community activity.

### **The European Union Policy on the Transport of Radioactive Materials**

The plan for a Europe without internal frontiers is now being implemented. Barriers to free trade between Member States are being dismantled and open competition facilitated. The White Paper “Completing the Internal Market” published by the European Commission in June 1985 defined three separate categories of internal barriers to the free movement of capital, goods, labor, and services. These were fiscal, physical, and technical barriers. Our concern here is with the technical barriers which result from differences in national legislations.

The determination to achieve the Single Market is based on the necessity for close cooperation in the fields of industry and technology. Without this it will be impossible to compete effectively with other powerful trading blocs such as the United States and Japan/East Asia. In this context, we have recently seen the creation of the North American Free Trade Agreement (NAFTA), which has been in effect since January 1 of last year. This development is very similar to the General Agreement on Tariffs and Trade, or GATT, and comparable to the creation of Europe’s Single Market. It is a major development within the world economy and in international trade. The general motivation is to create a more favorable environment for stimulating enterprise, competition, and trade.

The free movement of goods is one essential factor. Safety is a primary concern in this context. There is a general tendency to seek harmonization in the EU Member States on the basis of the already existing international conventions, norms, and standards and to avoid developing new provisions which could be duplications of existing regulations. In land transport, in particular, to ensure adequate levels of safety, the Commission has sought to promote alignment of Member States’ domestic legislation with internationally recognized road, rail, and inland waterways transport agreements on the transport of dangerous goods, respectively, ADR-RID and ADN. These agreements have been ratified by most of the European Union Member States, although the Commission itself is generally not a contracting part to the Agreements.

## **The Standing Working Group on the Transport of Radioactive Material**

This group operates under the auspices of DGXVII, the Directorate General for Energy (which includes nuclear energy). It consists of experts from the Member States of the EU and has the following objectives:

- Supporting the work of Member States in contributing to the continuous review of the IAEA Regulations; and
- Ensuring the correct and harmonious application of the IAEA Regulations within the European Union.

The composition of the Standing Working Group comprises members representing countries which have been fully involved in the IAEA meetings on Regulations and, on the other hand, countries with no direct involvement in them. It has, therefore, been able to act as a means of both inputting information on transport experience to the IAEA and disseminating information on the provisions of the Regulations to the other countries. The group normally meets twice a year, mostly in Brussels but occasionally in Luxembourg.

### **Recent Developments**

#### Liaison with FORATOM

FORATOM's primary objective is to promote the nuclear industry proactively and to improve the perceptions of the industry in the European Commission, the Council of Ministers, the European Parliament, the Economic and Social Committee, other international forums, and the press. Its other objectives are to act as the voice of the nuclear industry in the various European policy debates and initiatives which affect the industry; to collect and distribute relevant information regularly, as the need arises, from the European institutions to the membership; and to act as a technical adviser to the IAEA and other institutions, consolidating and channeling to these organizations industry expertise on specific issues.

At the request of DGXVII, FORATOM set up a Nuclear Transport Working Group to help establish a unitary regime for transporting radioactive materials within EU Member States. This Group also aims to harmonize administrative procedures such as Competent Authority approval mechanisms and to develop a homogeneous insurance regime. It is now an established procedure that the DGXVII Special Working Group and the FORATOM Nuclear Transport Working Group meet on the same day: separately in the morning to discuss issues specific to the two groups, and together in the afternoon to deal with items on which mutual cooperation is beneficial.

#### Joint IAEA/EU Training Courses

An important initiative was launched in 1994 to provide a series of regional training courses on the safe transport of radioactive material primarily for representatives from

Eastern Europe and the States of the former Soviet Union. This was a venture sponsored jointly by the IAEA and the EU, with financial contributions from both bodies. The first course, which took place at Braunschweig in May 1994 and was hosted by the Bundesamt für Strahlenschutz (BfS), featured simultaneous Russian/English translation. An extremely worthwhile consequence of this course was that the representative from Bulgaria was later seconded to BfS and worked for some months with the staff of the German Competent Authority. In May 1995, the Commissariat à l'Énergie Atomique hosted a similar course at Saclay, near Paris, and in the autumn of 1996 a further course will be held at Mol, to be hosted by the Belgian Competent Authority. This series of courses is contributing to raising transport safety standards in Eastern European States prior to their possible future admission to the European Union.

### **Other Work in Support of the Safe Transport of Radioactive Materials**

The European Union has sponsored work relating to both regional concerns such as the development of the Single Market and harmonization and worldwide issues such as the development of the IAEA Regulations. The EU is also concerned about the public perception of radioactive material transport, particularly in relation to accidents, and it is working toward developing a Transport Event Scale, outlined below, which is specific to the transport of radioactive material. More widely, Member States of the Union and the Commission have been actively involved in the development of the IAEA Regulations and have provided technical information to influence the way that material in the lower end of radiological risk is treated. Two studies, one on the treatment of LSA/SCO materials and the other on exemption values, are also outlined below. The Standing Working Group has developed a plan of action for further studies which, subject to budgetary approval, will be undertaken to address these and other issues.

#### Transport Event Scale

The IAEA has developed an international nuclear event scale known as INES (IAEA and OECD 1992). It is a means for promptly communicating to the public the safety significance of events reported at nuclear installations.

INES aims to facilitate a common understanding between the nuclear community, the media, and the public. It is applicable to events at nuclear installations that are associated with the civil nuclear industry and to events during the transport of radioactive materials to and from those facilities. The scale has not, however, been specifically designed for the general transport of radioactive material.

There are a number of reasons for extending such a scale to encompass a wider range of radioactive material movements. It appears anomalous that a universally known and applied incident event scale exists only for nuclear facilities and transport to and from them; most of the events that occur during transport take place in public places and their effects on the public are, therefore, more immediate. A scale by which the public and media could be informed of the severity of an event would undermine the

persistent attempts by antinuclear organizations to question the safety of the transport of radioactive materials and the adequacy of the international standards.

A uniform system of classification of transport events, one which was compatible with the INES scale, would help international databanks such as that of the IAEA (IAEA 1989) and the CEC (Lombard et al. 1990) or other international comparisons. The difficulties of classifying accidents and incidents should not be underestimated (Wilson et al. 1995). However, a feasibility study has already been undertaken (Ringot 1994), and recommendations on the definition and evaluation of the levels of severity have been made.

### LSA/SCO

The current edition of the IAEA Regulations on the transport of radioactive materials (IAEA 1990) provides for three categories of LSA materials and two categories of SCO. Many of the radioactive wastes from the decommissioning of nuclear facilities will be included in these categories along with ores, ore concentrates, and other radioactive wastes. The categories are graduated, with the lowest, least hazardous category of both LSA and SCO being able to be carried with minimal or, in some cases, no packaging requirements. The higher categories require higher standards of packaging. Since the introduction of these categories in the 1985 IAEA Regulations, many consignors have reported difficulties in specifying the appropriate category of materials to be transported and in demonstrating compliance with some of the regulatory requirements relating to material specification such as those for distribution and average specific activity.

A feasibility study (Lange et al. 1994) has examined possible alternative systems of classification based on possible airborne releases in accident conditions. It recognized the need to take into account current practices and perceived future needs, and it has developed a radiological model to provide a firm basis for a system founded on activity limits for packages whose contents are grouped into three main categories.

The European Community intends to do further work in this area. A follow-on study is proposed which will review and test the new system by checking its ability to cope with different types of material that need to be shipped. In this way, with the help of those experienced in the conditioning, packaging, and shipment of such materials, the system can be modified and adapted in an iterative process.

### Exemption Values

Exemption values in transport have been under consideration throughout a large part of the revision cycle leading to SS6(96). In parallel to this, the European Union has been developing values of total activity and of activity concentration below which notification to the Competent Authorities would not be required (Harvey et al. 1993). These have been adopted by IAEA in their Basic Safety Standards (BSS) as sources that are automatically exempted from the requirements of the BSS. However, no specific transport scenarios were considered in the work used by the BSS, and the

activity and activity concentration values calculated could not be immediately accepted by the transport community.

At the request of SAGSTRAM, the relevant transport scenarios were determined by IAEA consultants, and the European Union sponsored the calculation of exemption values for 20 representative nuclides for comparison with the BSS values (Carey et al. 1995). This work led to the adoption of the BSS values by the transport community as exception value in SS6(96). In particular, isotope-specific values for exempt activity concentrations which are isotope-specific and span several orders of magnitude will replace the single figure of 70kBq/kg in the current regulations.

#### Safety Assessment of Transport in Central and Eastern European Countries (CEES) and Former Soviet States (CIS)

Within the framework of the Commission's Technical Assistance program for the Commonwealth of Independent States (TACIS), two projects were started recently:

- The assessment of the safety in transport of Irradiation Nuclear Fuel (INF), going out from different types of reactors (RBMK, VVER 1000, VVER 440, and FBR). This activity covers three CIS republics: Russia, Kazakhstan, and Ukraine.
- The in-depth engineering assessment of the containers used for VVER 440 spent-fuel transports. This project will cover mainly the TK-6 container, and its possible improvements, used for the transport of irradiated fuel in Russia.

Additional projects for the Central and Eastern European Countries are under consideration for funding.

#### **Conclusion**

The institutions of the European Union continue to play a significant role in developing and maintaining the highest standards of safety in the transport of radioactive material in its Member States. Harmonization of national standards and regulations must be the ultimate aim, and the implementation of the European Single Market must be an important factor in achieving such an aim. At the same time, the European Union is seeking to assist the developing States of Eastern Europe in aspiring to these same standards.

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