

ASSESSMENT OF COUNTRY IMPLEMENTATION OF INTERNATIONAL REGULATIONS FOR THE SAFE TRANSPORT OF RADIOACTIVE MATERIAL

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ABSTRACT

Media discussions in the mid-1990's about the safety of radioactive material transport have resulted in this issue being addressed annually since 1997 by the General Conference of the International Atomic Energy Agency (IAEA). In 1998 the General Conference passed a resolution inviting countries shipping radioactive material to provide, as appropriate, assurances to potentially affected States upon their request that their national regulations take into account the Agency's Regulations; and requested the IAEA Director General to report to the General Conference about the global status of implementation of the IAEA Transport Regulations. The IAEA Secretariat undertook a survey in 1999 and again in early 2000 of its Member States' implementation of the IAEA Transport Regulations. In both attempts, response to the IAEA questionnaire was low, representing approximately one-half of the countries that are IAEA Member States. In 2000, the General Conference, noting the results of a the second survey, passed another resolution encouraging Member States to bring their national regulatory documents governing the transport of radioactive material in line with the 1996 Edition of the IAEA Transport Regulations. It also requested the IAEA Secretariat to again seek information regarding how Member States regulate the transport of radioactive material, and to publish that information on the Agency's transport safety web page. This paper describes the steps being taken by the IAEA Secretariat to obtain the information that will be published on the Agency's transport safety web page and describes the results – to-date – of the 2001 survey of Member States' implementation of the Transport Regulations.

INTRODUCTION

Every year in September, all Member States attend the General Conference of the International Atomic Energy Agency at its headquarters in Vienna. The body addresses administrative matters, considers applications for membership, conducts a wide ranging general debate on the Agency's programme and examines a variety of matters brought to its attention. One such topic is the safety of transporting radioactive material, which was also the subject of media discussions in the 1990s.

Since 1961, the Agency's "Regulations for the Safe Transport of Radioactive Material"¹ has been used worldwide as the basis for regulating the transport of radioactive material in nuclear energy and non-nuclear energy applications. The experience in this field was the subject of discussions that

led the General Conference in 1998 to pass a resolution recognizing that “compliance with regulations which take account of the Agency’s Transport Regulations is providing a high level of safety during the transport of radioactive materials”². In addition, the resolution invited countries shipping radioactive material to provide appropriate assurances to potentially affected States upon their request that their national regulations take into account the Agency’s Transport Regulations.

During this period, the 1996 Edition of the Transport Regulations was published and arrangements were being made by international organizations responsible for modal regulations to incorporate the Agency’s safety requirements into their respective regulatory documents. More importantly, agreement was being reached regarding a uniform implementation date for the Agency’s Regulations, and the regulatory documents of the international modal organizations. The implementation dates agreed were:

- for the sea mode: 1 January 2001, with a 12-month transition period
- for the air mode: 1 July 2001, with no transition period
- for rail and road in Europe: 1 July 2001, with a 6-month transition period.

Details of this transition between regulatory requirements are provided in a companion paper at this symposium³.

Among the Agency’s Member States, national legislation for regulating the transport of radioactive material takes account of the Agency’s Transport Regulations either directly (by reference or verbatim quote) or indirectly (through compliance with the regulatory documents of the modal organizations). For the air mode, the 187 Contracting States of the International Civil Aviation Organization are required by the Convention on International Civil Aviation (also known as the Chicago Convention, which was signed on 7 December 1944) to comply with the requirements of the ICAO Technical Instructions⁴. For the sea mode, the 158 Member States of the International Maritime Organization are required to comply with the requirements of the INF Code⁵; discussions are being held at IMO to make the requirements of the IMDG Code⁶ mandatory. In Europe, European Community legislation requires compliance with ADR (road)⁷ and RID (rail)⁸ requirements. Likewise in South America, the member countries are required to comply with the requirements of the MERCOSUR/MERCOSUL⁹ agreement.

The binding nature of these regulatory documents, whose requirements incorporate those of the Agency’s Transport Regulations, in turn provide a strong basis for the widespread use of the Agency’s Transport Regulations throughout the world.

At its 2000 General Conference, a resolution on transport safety¹⁰ requested the Secretariat to seek from each Member State which did not respond to the February 2000 survey information on how it regulates the transport of radioactive materials, for publication on the Agency transport safety web page. Taking this request into account, considering the above-described situation, and being mindful of its role as a forum for international information exchange, the Agency started collecting and collating detailed information about Member States’ process for regulating the transport of radioactive material. The data collecting activity started in March 2001. Responses have been obtained from 40 of the Agency’s 132 Member States. Efforts will continue with the goal of achieving a high response rate. Member States’ responses are being entered into an electronic table that is now posted on the Agency’s transport safety web page. By doing this, the Agency hopes to

assist Member States in providing information that their national regulations take account of the Agency's Transport Regulations.

METHODOLOGY

On 15 March 2001, the Agency started a survey by sending a circular letter to all its Member States that requested the following information:

- National law establishing the competent authority for radioactive material transport,
- The identity of the designated competent authority for radioactive material transport,
- National documents for regulating radioactive material transport, and edition of Agency Transport Regulations on which the national regulations are based; and
- Plans for implementing the 1996 Edition of the Agency's Transport Regulations.

Attached to that circular letter was a table showing whatever data were already available to the Agency. Such data were obtained from the results of earlier surveys (of a slightly different, less detailed nature than the one under discussion in this paper), the contents of the Agency's List of Competent Authorities¹¹, and information provided by experts attending various Agency meetings. The researched data differed in degree of detail, and was incomplete because many Member States had not responded to earlier surveys. In essence, therefore, Member States were being invited to review the data that were recorded in the table, and communicate to the Agency whatever additions or modifications were deemed necessary.

Member States responses received at the Agency were reviewed for completeness. Where needed, Agency staff contacted the submitting offices to obtain additional information to ensure that all columns of the table contain appropriate text. Only data from those Member States which have provided complete information are included in the table. That is, Member States who did not provide a response, as well as Member States who only provided a partial response are not cited in the table.

In addition to posting the information on the Agency's transport safety web page, the results of the survey are cited in a report for the General Conference to review at its September 2001 session.

ANALYSIS AND DISCUSSION

In an earlier survey undertaken in 2000, the Agency sought to determine:

- if its Member States have national documents for regulating the transport of radioactive material,
- if such documents are based on the Agency's Transport Regulations, and
- if the requirements of the international modal organizations are also enforced.

Of the then 130 Member States, 55% provided a response to the survey. The responses were summarized for the 2000 General Conference as follows:

- 85% indicated that they have national documents for regulating radioactive material transport,

- approximately 50% indicated that the national regulatory documents are based on the Agency's Transport Regulations,
- approximately 1/3 indicated that the national regulatory documents are based directly on the 1985 (As Amended 1990) edition of the Agency's Transport Regulations, with 20% using other editions of the Transport Regulations, and
- approximately 40% indicated that their national regulatory documents are based on the requirements of the international modal organizations.

Although the response rate for that survey was relatively low, the responses nevertheless included those countries that are generally regarded to be the top 30 that ship radioactive material. Thus it could be concluded that most of the radioactive material shipments worldwide are being regulated to the Agency's Transport Regulations. This reinforces the conclusions drawn by the General Conference in 1998, as previously noted.

Member States, however, continue to be keenly interested in obtaining assurances that all radioactive material shipments, particularly by the sea mode, are regulated using the Agency's Transport Regulations. The discussions at the General Conference level have therefore persisted, and recently have resulted in annual Resolutions that, among other things, require the Agency to undertake certain activities to encourage the use by all Member States of the Agency's Transport Regulations. The survey under discussion is one of the activities being taken by the Agency to address the Resolution passed by the General Conference in 2000¹¹. The information collected through the current survey will serve to demonstrate that Member States have the appropriate legislation that names the responsible national authorities and regulates the transport of radioactive material. The information will indicate areas where radioactive material transport is not regulated according to the vision of the General Conference, and further discussions may ensue as to the need for additional action on the part of the Agency.

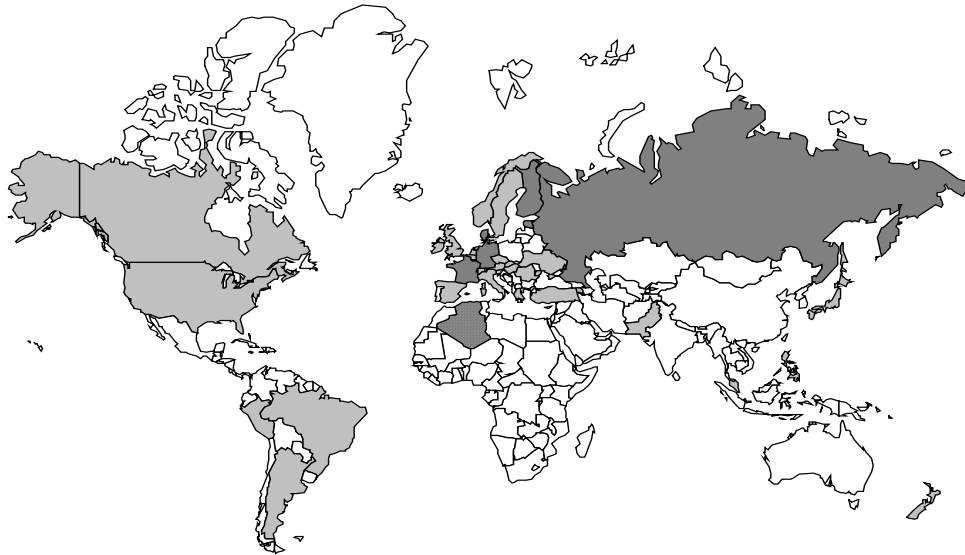
As of 14 August 2001, the following 40 (30%) of the Agency's 132 Member States had provided complete information for the survey (*in italics, Member States operating nuclear power plants*):

Algeria	Estonia	Malaysia	Singapore
<i>Argentina</i>	<i>Finland</i>	Malta	<i>Slovakia</i>
<i>Armenia</i>	<i>France</i>	<i>Netherlands</i>	<i>Slovenia</i>
Austria	<i>Germany</i>	New Zealand	<i>Spain</i>
<i>Belgium</i>	Greece	Norway	<i>Sweden</i>
<i>Brazil</i>	<i>Hungary</i>	<i>Pakistan</i>	<i>Switzerland</i>
<i>Bulgaria</i>	Ireland	Peru	Turkey
<i>Canada</i>	Italy	Philippines	<i>Ukraine</i>
<i>Czech Rep.</i>	<i>Japan</i>	<i>Romania</i>	<i>UK</i>
Denmark	Liechtenstein	<i>Russian Fed.</i>	<i>USA</i>

These countries have a designated national competent authority and regulations to control radioactive material transport. Thirty-two of the countries will be implementing TS-R-1 (ST-1

Revised) starting in 2001, seven of the countries reported that they plan to do so in 2003 and one country predicts implementation in 2005.

According to the responses received, a graphical representation of the areas where TS-R-1 (ST-1 Revised) will be used (all shaded areas) is shown in the following:



It must be emphasized that the graphic only represents data received from countries that provided complete responses as of 14 August 2001. In the ensuing period, other Member States will be able to complete their respective entries and the Agency will reflect such in later versions of the diagram. The table is accessible under the following URL:

<http://www.iaea.org/ns/rasanet/programme/radiationsafety/transport/safety/adoptionoftransportregs.htm>

and will be updated periodically to reflect additional information as received from Member States.

The data alone are not considered to constitute a sufficient basis for drawing definitive statistical conclusions. It can be said that it will take about four years after the agreed international modal organization implementation dates in 2001 for the countries to be regulating the transport of radioactive material according to the requirements of TS-R-1. It must be noted however, that the requirements were published in 1996, and, therefore, altogether it will have taken about a decade for Member States to upgrade their national legislation.

The value of the data however, is that it can be published on the Agency's transport safety web page where interested parties can refer to it to ascertain which countries are using the Agency's Transport Regulations. The Agency will continue to work towards obtaining the information from those Member States which simply were not able to provide the data in time for the preparation of this report. In those Member States which are currently upgrading their national infrastructure for radiation protection (under a Technical Co-operation project of the Agency) the appropriate information will eventually become available.

Thus, the survey has not been concluded; it is only the start of many years' work in collecting one type of information that Member States would like to have to assure themselves of the truly international application of the Agency's Transport Regulations.

CONCLUSION

The Agency will have to actively pursue the collection of information for the table during the next three to four years, so that information for a higher number of Member States can be reported to the General Conference. This will entail inviting Member States to provide information annually until satisfactory results have been achieved. A new cycle of data collection will need to be started whenever the Transport Regulations are fully revised, and international agreement has been reached on an appropriate implementation date.

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