WORLDWIDE APPLICATION OF IAEA SAFETY SERIES No. 6: REGULATIONS FOR THE SAFE TRANSPORT OF RADIOACTIVE MATERIAL, 1985 EDITION

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Abstract

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The International Atomic Energy Agency has recently issued the 1985 Edition of Safety Series No. 6. The changes made in the Regulations, the plans of Member States and international organizations for adoption and the Agency's own plans for future revisions of these Regulations are reviewed.

INTRODUCTION

Based upon data provided by 52 Member States of the International Atomic Energy Agency (IAEA) in the early 1980s, it is estimated that from 18 million to 38 million package shipments of radioactive material currently occur each year worldwide (see Ref. [1]). These shipments cover all types of materials, in many different forms of packagings and are carried by all modes of transport. When these data are extrapolated over the period of time for which there have been significant shipments of these materials, approximately 400 million to 800 million package shipments of radioactive material have occurred over the past 40 years. Furthermore, the safety record for these shipments has been exceptional. During 1985 the IAEA performed an assessment of the radiological impact of the transport of radioactive materials. This assessment, which was performed with the assistance of experts from many countries, indicated that exposures of most workers and of the public in the normal transport of such materials are low. Only in a very limited number of controlled cases do transport workers receive doses which are a significant fraction of

applicable limits. Finally, it was concluded from the information available that there has never been an accident or incident involving radioactive material transport which has led to the significant exposure of a member of the public.

This excellent record is due primarily to the regulations used by individual countries and international organizations to control the packaging, handling, storage and shipment of such consignments. These regulations are generally based, directly or indirectly, on IAEA Safety Series No. 6: Regulations for the Safe Transport of Radioactive Material. For convenience, Safety Series No. 6 will be referred to hereafter as the Regulations.

This paper will first provide a brief background and history of the Regulations. The latest (1985) Edition will then be overviewed in detail, followed by a review of the method of implementation by Member States, and their plans for adoption, of the 1985 Edition of the Regulations and actions planned by key international organizations. Finally, future plans for continuously reviewing and periodically updating the Regulations will be summarized.

BACKGROUND AND HISTORY

To assure safety during the transport, handling and storage of radioactive materials, it was recognized decades ago that a very strict set of standards — developed and recognized on an international level — would be required. The concept of international acceptance was recognized as being vital, since transport is usually the only aspect of any controlled radioactive material related activity in which the radioactive material itself may directly cross international borders. Indeed, even for transport within a country, international (out-of-country) carriers or packagings can be involved.

Thus, shortly after the formation of the IAEA in 1957, it was given the task of developing safety rules for the transport of radioactive materials covering all modes of transport. The Agency's activities in this area are currently carried out by the Radiation Protection Section of the Division of Nuclear Safety. Consequently, the focus of these activities is — and always has been — on ensuring safety. Based upon existing good practices in the transport of hazardous goods and the few simple regulations for radioactive materials already in effect, the IAEA began to develop a comprehensive set of rules in 1958.

As a result, and with the assistance of experts from around the world, the first edition of the Regulations was published in 1961. In addition to being applied directly to the Agency's operations and to Agency-supported activities in Member States, they were (and still are) "recommended to Member States and to International Organizations concerned as a basis for national and international transport regulations".

Revised editions of the Regulations, which took into account developments in technology and shipping practices, were issued in 1965, 1967 and 1973 (with an

amended 1973 Edition being also issued in 1979), and most recently in 1985. In addition the Agency has, over the years, produced companion documents giving background information on and supporting the adoption and implementation of the Regulations, including Safety Series No. 37, Advisory Material for the Application of the IAEA Transport Regulations (first published in 1973); and a much earlier document, Safety Series No. 7, Notes on Certain Aspects of the Regulations (published in 1961). Both Safety Series No. 7 and Safety Series No. 37 are being revised to reflect the 1985 Edition of the Regulations, where Safety Series No. 7 will have the new title, Explanatory Material for the IAEA Regulations for the Safe Transport of Radioactive Material (1985 Edition).

THE 1985 EDITION OF THE REGULATIONS

The process of producing the latest edition of the Regulations was initiated in 1979 by the IAEA at the request of its special advisory body, the Standing Advisory Group for the Safe Transport of Radioactive Materials (SAGSTRAM). It was recognized that, despite the excellent safety record in the transport of radioactive materials, periodic updating and revision was necessary to allow the Regulations to stay current with advances in technology, with changes in the needs of carriers and regulators, and with the evolving international standards for radiation protection.

This revision was performed over a period of six years with the extensive co-operation of IAEA Member States and the relevant international organizations. It involved the convening at the Agency of a significant number of consultants meetings, technical committee meetings and advisory group meetings. Approximately 150 experts from 22 Member States and 12 international organizations participated. The final draft of the revised Regulations was considered and approved by the IAEA's Board of Governors in September 1984, and the new edition was published in 1985 in English, French, Russian and Spanish.

The process which culminated in the 1985 Edition of the Regulations included a comprehensive and detailed review of the 1973 (As Amended) Edition of the Regulations and of proposed changes in these requirements and the justification for these changes. There were a variety of justifications which were accepted during the revision, ranging from quantified modelling to more subjective arguments, such as practical past experience in applying the Regulations and the need for improved clarity of presentation. The latter consideration resulted in the most apparent changes to the Regulations, recognized by a complete revision of the structure and presentation of Safety Series No. 6.

In order to provide a more 'user-friendly' document, the Regulations were restructured to present the most basic information first and to build on this information to present the complete set of requirements. Consequently, an expanded set of definitions are presented in Section I, basic principles established in Section II, and the activity limiting A_1/A_2 values and calculative techniques presented in

Section III. The detailed requirements in Sections IV-VII build on this base of information. Defined terms are presented in bold-faced type for the reader's convenience and to ensure that these terms are only interpreted in accordance with their definition as presented in the Regulations. In several instances long and detailed textual requirements have been presented in tabular form, with a significant improvement in clarity. Finally, a detailed index was added to aid the user.

Radiation Protection

The Agency's Basic Safety Standards for Radiation Protection, Safety Series No. 9 (1982 Edition), are incorporated into the transport regulations. Some principles, such as keeping radiation exposures as low as reasonably achievable, are specifically mentioned and action levels are prescribed for various levels of individual occupational exposure. Additionally, guidance is given for the derivation of segregation distance requirements, since the establishment of specific requirements from a radiation protection standpoint is within the domain of international transport organizations.

Quality Assurance and Compliance Assurance

Increased emphasis is placed on both quality assurance and compliance assurance. Quality assurance is now required to cover the design, manufacture, testing, documentation, use, maintenance and inspection of **all** packages. Package designs which require competent authority approval now have their approval made contingent on the adequacy of the applicant's quality assurance programme.

The responsibility for maintaining an adequate compliance assurance programme is now placed squarely on the competent authorities. They must ensure that the provisions of the Regulations are being met in actual practice. Both quality assurance and compliance assurance are given visibility and emphasis by their prominent location in Section II of the Regulations. (A detailed guide on quality assurance has been developed and will be included as an appendix in the new edition of Safety Series No. 37. Also, a guide for competent authority implementation of the Regulations is being developed.)

Type B and Fissile Packages

Several significant changes were made to the requirements applicable to Type B and fissile package design and testing. Some of these changes will make it easier for designers to demonstrate compliance with the Regulations, while other changes may require modification or abandonment of some package designs. The most significant changes are:

(1) Dynamic crush test. Type B and fissile packages which are of lightweight (less than 500 kg) and low density (less than 1000 kg/m^3) design for transporting normal form contents with activity exceeding 1000 A_2 must be subjected to a crush test. The crush test consists of dropping a 500 kg mild steel plate (1 m by 1 m) onto the package specimen from a height of 9 m. Crush forces have been identified as a potentially significant accident environment and this requirement will ensure a measure of survivability to crush forces for susceptible package designs.

(2) Deep submergence test. Packages designed to transport more than 37 PBq (10^6 Ci) of irradiated fuel are required to be able to withstand submergence in water at a depth of 200 m without rupture of the containment system. This will help ensure recovery and limit the environmental consequences of a spent fuel flask being sunk in rivers and in lakes or on continental shelf areas of this depth.

(3) Release limits. The allowable activity release limits for Type B(U) and Type B(M) packages following the test conditions were made the same. This will make it easier to demonstrate compliance with the post-accident condition leak rate requirement, while ensuring appropriate control of the package contents.

(4) "Grandfathering" of previous approvals. Packages designed and approved in accordance with the 1967 or 1973 editions of Safety Series No. 6 may continue to be used subject to certain conditions. Packages approved to the 1967 Regulations and, after 1990, packages approved to the 1973 Regulations are subject to multilateral approval.

Radioactive Materials Classification

The requirements governing Type A package content limits and the prescriptions for lower activity materials and objects are significantly revised as follows:

(1) Type A package content limits. A new modelling system has been incorporated for determining individual exposures to Type A package contents following a breach of the packaging. New exposure pathways were built into the model to account for such phenomena as skin contamination. Additionally, the latest International Commission on Radiological Protection metabolic data were incorporated into the model. The changes resulted in some significant modifications of the A_1 and A_2 values, some of which increased and some of which decreased. Most significantly decreased are the values for those radionuclides which when deposited on the skin would result in a significant beta dose to the skin.

(2) Low Specific Activity (LSA) materials are redefined into three groups, LSA-I, LSA-II and LSA-III, while limited hazard contaminated objects are classified as Surface Contaminated Objects (SCO). The previous classification of low level solid has been removed, with the materials it formerly encompassed being divided into LSA-III and SCO categories. The most significant change in this

area is the establishment of a radiation level limit on LSA and SCO materials. The quantity of LSA or SCO in a package must be limited to the extent that the external radiation level at 3 m from the unshielded material is less than 10 mSv/h. This change establishes an upper bound on the radiation hazard these materials can present even if package shielding is lost.

Industrial Packaging

The previous packaging category known as 'strong industrial packaging' has been redefined. Specific test conditions are assigned to each of the three levels within the new 'Industrial Package' category, IP-1, IP-2 and IP-3. The industrial packaging requirements range from only the general requirements for all packaging (IP-1) to essentially a Type A package (IP-3). This finer specification of packaging integrity allows a better alignment between the potential hazards of LSA and SCO and their packaging requirements.

Fissile Material

A significant simplification has been made in the classification of fissile material packages and the specification of appropriate degrees of control to be exercised over these packages. The previous categories of Fissile Classes I, II and III have been eliminated. Control of the criticality potential of fissile materials is now based on the transport indexes of the packages containing the material. Certain exceptions are still maintained for small quantities and other extremely criticality-safe configurations, but when control over the loading and storage of packages is required, this is accomplished by transport index summation.

Packages which under the old system would be Fissile Class I are now handled solely on the basis of their transport index as determined by the radiation level. Packages which were Fissile Classes II and III under the old system must meet the old Fissile Class II package criticality criteria and are now generally limited to 50 transport indexes for exclusive use and 100 transport indexes for exclusive use shipments.

Contamination Limits for Excepted Packages

Packages which contain small amounts of radioactive materials and instruments or articles which meet certain criteria are now known as "excepted packages". These packages are excepted from many of the detailed requirements because of their very limited hazard during transport. For example, they are excepted from package labelling and documentation.

The allowable non-fixed external surface contamination on these packages has been set at a level 10 times lower than that for other packages. Since little control is exercised over these packages during transport, it was decided to limit the non-

fixed contamination to values which would be appropriate for the freedom allowed for these packages in the transport system.

Modal Requirements

Generally, the requirements for packages in the Regulations have been mode independent, although modal-specific requirements have been specified previously. Because the international air mode authorities, the International Civil Aviation Organization (ICAO) and the International Air Transport Association (IATA) impose requirements which specifically apply to air carriage, these requirements are included in the 1985 Edition of the Regulations. They relate to maximum accessible package surface temperatures (50°C at an ambient temperature of 38°C); containment integrity requirements for ambient temperatures ranging from –40°C to +55°C; and for packages containing liquid radioactive material, a containment integrity requirement for a pressure differential of 95 kPa.

SI Units of Measurement

The SI system of measurements has been incorporated into Safety Series No. 6 as the legal units of measurement. Customary units are still given in parentheses in order to aid in the transition to the new units. The customary unit values have been rounded so that any error from using them will be on the conservative side.

It is anticipated that some period of transition will be needed to accomplish the changeover to SI units. The international transport organizations will need to work co-operatively to ease this transition, while still striving to meet target dates for the adoption of modal regulations based on the 1985 IAEA transport requirements.

PROCEDURES USED BY MEMBER STATES FOR ADOPTING AND IMPLEMENTING THE REGULATIONS

Member States of the IAEA implement international agreements, regulations and recommendations for regulatory control of the transport of radioactive material in a variety of ways. Each country must act within its own statutory requirements. The IAEA, working with the individual Member States, undertook in 1984 to examine the manner in which domestic, import, export and through-country shipments of radioactive materials are controlled and regulated worldwide. The information to be examined was collected using a questionnaire. By the end of January 1986, completed questionnaires had been received from 52 Member States.

The Member States which responded are: Argentina, Austria, Bangladesh, Belgium, Bolivia, Brazil, Bulgaria, Canada, Chile, China, Colombia, Czechoslovakia, Denmark, Ecuador, Egypt, Finland, France, German Democratic Republic, Federal Republic of Germany, Greece, Hungary, India, Indonesia, Israel,

TABLE I. LIST OF TRANSPORT DOCUMENTS OF INTERNATIONAL ORGANIZATIONS

International organizations
Recommendations on the Transport of Dangerous Goods, Committee of Experts on the Transport of Dangerous Goods, United Nations (UN), New York.
Technical Instructions for the Safe Transport of Dangerous Goods by Air (TI), International Civil Aviation Organization (ICAO), Montreal.
Dangerous Goods Regulations, International Air Transport Association (IATA), Montreal.
International Maritime Dangerous Goods (IMDG) Code, International Maritime Organization (IMO), London.
Universal Postal Convention of Rio de Janeiro 1979, Universal Postal Union, Bern.
Regional international organizations
European Agreement Concerning the International Carriage of Dangerous Goods by Road (ADR) and Protocol of Signature, United Nations Economic Commission for Europe (ECE), Geneva (1957).
Règlement international concernant le transport des marchandises dangereuses par chemins de fer RID, Convention internationale concernant le transport des marchandises par chemins de fer (CIM), Office central des transports internationaux par chemins de fer (OCTI), Berne.
Regulations for the Transport of Dangerous Goods on the Rhine (ADNR), Central Commission for the Navigation of the Rhine (CCNR), Strasbourg.
European Provisions Concerning the International Carriage of Dangerous Goods by Inland Waterway (ADN), draft, United Nations Economic Commission for Europe, Geneva.
Regulations for the Transport of Radioactive Substances. Annex 4 to the Agreement on International Railroad Freight Traffic (SMGS), Railroad Co-operation Organization (OSZhD), Warsaw.
Regulations for the Safe Transport of Spent Nuclear Fuel from Nuclear Power Plants of CMEA Member Countries — Transport by Rail, Council for Mutual Economic Assistance (CMEA), Moscow.

Italy, Japan, Malaysia, Mauritius, Mexico, Monaco, Netherlands, New Zealand, Norway, Pakistan, Peru, Philippines, Poland, Portugal, Romania, Singapore, South Africa, Spain, Sweden, Switzerland, Syrian Arab Republic, Tanzania, Turkey, United Kingdom, United States of America, Uruguay, Venezuela and Zambia.

The results of the examination indicate the important role international organizations play in the transport of radioactive materials. All the Member States involved in this examination regulate the transport of radioactive material within their country

on the basis of international agreements, regulations and recommendations. Safety Series No. 6 is the ultimately controlling document, since it serves as the basis for the radioactive material portions of other international transport documents (Table I) and since it is made directly binding in the regulations of many countries. The data which follow are up to date as of 1 June 1986.

INTERNATIONAL AGREEMENTS, REGULATIONS AND RECOMMENDATIONS AS THE BASES FOR REGULATING TRANSPORT

Domestic transport

Information on regulating domestic transport of radioactive material was received from 52 Member States. In every case the domestic regulations are based on international agreements, regulations and recommendations. The following was concluded:

(1) 13.5% of the Member States involved regulate **only on the basis of the IAEA Regulations**.
(2) 21.2% of the Member States involved regulate **only on the basis of international documents other than the IAEA Regulations**.
(3) 65.4% of the Member States involved regulate **on the basis of the IAEA Regulations and other international documents**.

The relevant international transport documents and the areas of their application are listed in Table II, which also indicates the percentages of Member States using the document, or documents, in question as the basis for their domestic transport regulations.

International transport

Information on regulating international transport of radioactive material was also received from 52 Member States. The following was concluded:

(1) 11.5% of the Member States involved regulate **only on the basis of the IAEA Regulations**.
(2) 23.1% of the Member States involved regulate **only on the basis of international documents other than the IAEA Regulations**.
(3) 63.5% of the Member States involved regulate **on the basis of the IAEA Regulations and other international documents**.
(4) 1.9% of the Member States (one country) indicated that **it regulates using neither the IAEA Regulations nor any other international documents**.

Table II also gives the percentages of the Member States using the listed international document or documents as the basis for regulating their international shipments.

TABLE II. ADOPTION OF THE INTERNATIONAL DOCUMENTS BY 52 MEMBER STATES (DOMESTIC AND INTERNATIONAL TRANSPORT)

International organization and form of document	Area of application	Member States which regulate domestic transport using this document (%)	Member States which regulate international transport using this document (%)
IAEA: Safety Series No. 6[a]	Worldwide/All modes	78.8	75.0
UN/ECOSOC: Recommendations	Worldwide/All modes	15.4	17.3
Universal Postal Union: Acts	Worldwide/All modes	40.4	40.4
ICAO: Technical Instructions[b]	Worldwide/Air mode	55.8	57.7
IATA: Regulations[b]	Worldwide/Air mode	59.6	59.6
IMO: IMDG Code	Worldwide/Sea mode	63.5	65.4
ECE: Agreement (ADR)	Regional/Road mode	30.8	44.2
OCTI: Regulations (RID)	Regional/Rail mode	40.4	44.2
ECE: Agreement (ADN)	Regional/Inland waterway mode	5.8	5.8
CCNR: Agreement (ADNR)	Regional/Rhine river	5.8	9.6
CMEA: Regulations	Regional/Rail mode	3.8	5.8
OSZhD: Agreement (SMGS)	Regional/Rail mode	3.8	5.8

[a] Regulations for the IAEA and its support activities, recommendations for all other activities.

[b] 80.8% of countries surveyed use either ICAO Technical Instructions, IATA Regulations, or both in regulating the air carriage of radioactive materials.

ADOPTION OF THE IAEA REGULATIONS AS THE BASIS FOR NATIONAL REGULATIONS

Domestic transport

Detailed data on the adoption of the Regulations were received from 44 Member States. Three of these States, however, adopt the Regulations only via other international documents.

Table III indicates which edition of the Regulations is used as a basis for the domestic regulations of the 41 Member States which directly adopt the Regulations.

TABLE III. DIRECT ADOPTION OF THE DIFFERENT EDITIONS OF THE REGULATIONS BY MEMBER STATES, DOMESTIC AND INTERNATIONAL TRANSPORT ORGANIZATIONS

Edition of the Regulations	Domestic transport of 41 Member States (%)	International transport of 39 Member States (%)
1964 Revised Edition	—	—
1967 Edition	—	2.6
1973 Revised Edition (published in 1973)	34.1	38.5
1973 Revised Edition (As Amended) (published in 1979)	63.4	56.4
1985 Edition	2.4	2.6

PLANS OF MEMBER STATES FOR ADOPTION OF THE 1985 EDITION OF THE REGULATIONS

Information on plans to adopt the 1985 Edition of the Regulations was received from 42 Member States. Table IV summarizes these plans, from which it can be seen that more than 80% of the Member States plan to adopt the 1985 Edition by 1989. In addition, the data showed that 88.1% planned to adopt the Regulations in the same way as they do now.

TABLE IV. THE PLANNED YEARS OF ADOPTION OF THE 1985 EDITION OF THE REGULATIONS

Year	42 States involved (%)
1986	28.6
1987	23.8
1988	19.0
1989	9.5
1990 or later	19.0

Some Member States have adopted more than one edition of the Regulations, e.g. different editions for different modes of transport. In these cases the percentages are calculated taking into account the newest edition only. One Member State still utilizes the 1964 Revised Edition and three Member States still utilize the 1967 Edition for part of their regulations.

The procedures used for adopting IAEA Regulations for domestic transport are summarized as follows:

(1) 36.6% of Member States involved have adopted the Regulations by direct reference.
(2) 46.3% have adopted the Regulations in principle but a different format or different words have been used.
(3) 17.1% used other means, e.g. decisions of a competent authority and a combination of the above procedures.

International transport

Detailed data on the adoption of the Regulations were received from 41 Member States. Three of these States, however, adopt the Regulations only via other international documents.

Table III also indicates in summary form which edition of the Regulations is used as a basis for the international regulations of the 38 Member States which directly adopt the Regulations.

Some Member States have adopted more than one edition of the IAEA Regulations, e.g. different editions for different modes of transport. In these cases the percentages are calculated taking into account the newest edition only. For international transport, two Member States still utilize the 1967 Edition for part of their regulations.

The procedures used for adoption and for international transport are summarized as follows:

(1) 43.6% of Member States involved have adopted the Regulations by direct reference.
(2) 41.0% in principle.
(3) 15.4% by other means.

ADOPTION BY INTERNATIONAL ORGANIZATIONS OF THE 1985 EDITION OF THE REGULATIONS

Since the 1985 Edition of the Regulations was finalized, the IAEA has worked closely with various international organizations to encourage accurate, complete and timely implementation of the Regulations into their regulatory documents (see Table I).

Changes reflecting the 1985 Edition of the Regulations have already been implemented in the fourth revised edition of the United Nations Recommendations on the Transport of Dangerous Goods (ST/SG/AC.10/1/Rev. 4) issued in 1986. Drafts of regulatory documents from ICAO, IMO, ECE and OCTI that reflect the 1985 Edition of the Regulations have been produced. Currently it appears that these four organizations will put the 1985 Edition into force on 1 January 1990 by issuing revised regulatory documents. If these four organizations issue their updated regulatory documents simultaneously, the harmonized international implementation of the Regulations worldwide will certainly be enhanced.

PROCEDURES FOR FUTURE REVISIONS OF THE REGULATIONS

New procedures have been developed at the IAEA, with the advice and concurrence of Member States, which will provide for continuous review and periodic revision of Safety Series No. 6. These procedures will lead to the following:

(1) Formal supplements to Safety Series No. 6, incorporating editorial corrections, minor corrections and changes of detail which do not affect the structure of the Regulations will be issued every two years beginning in 1986.
(2) Supplements, beginning in 1988, will also update the supporting documents to Safety Series No. 6, namely Safety Series No. 7 (the explanatory document), Safety Series No. 37 (the advisory document) and the Schedules.
(3) Full revision of these four documents will occur approximately every 10 years (subject to SAGSTRAM guidance), with the next revision expected in about 1994–1996.

Specifically, the process being considered will involve:

(a) Formal, periodic requests by the IAEA to Member States and cognizant international organizations for proposed amendments to the Regulations and its supporting documents.
(b) Receipt by the IAEA, through established official channels, of proposed amendments in a standard format where the proposals would include an identification of the problem, proposed changes, justification and assessment of the impact of the proposed changes and an assessment of the priority which should be given to the proposal.
(c) Circulation by the IAEA of the proposals for comment.
(d) Consideration of proposed changes and comments thereon by regularly scheduled review/revision panels convened by the IAEA.
(e) Oversight of the process and general guidance to the IAEA by periodic meetings of SAGSTRAM.
(f) Promulgation of minor changes and changes in detail, under the authority of the Director General of the IAEA, as Supplements to Safety Series Nos 6, 7 and 37 and to the Schedules once every two years.

(g) Promulgation of major changes to Safety Series No. 6, subject to approval by the IAEA Board of Governors, in the form of new editions to these four documents approximately once every ten years.

Parts of this procedure have already been implemented, and a 1986 Supplement to Safety Series No. 6 has been issued providing minor changes (correcting errors, etc.) and two changes of detail.

It is generally felt that the procedure outlined above will assist in maintaining the Regulations current with needs and for keeping the supporting documents current with the Regulations.

CONCLUSION

The transport of radioactive material has proven over the years to be safe, principally as a result of sound, internationally recognized regulations. The IAEA Regulations for the Safe Transport of Radioactive Material (Safety Series No. 6) serve as the precursor for essentially all other documents and international regulations in this area. With the emergence of the 1985 Edition of Safety Series No. 6, of forthcoming supportive guidance documents and the worldwide adoption and implementation of these principles, the excellent safety record for, and the facilitation of the transport of radioactive material should continue on into the future. Regulators are encouraged to adopt the new edition of the Regulations into their domestic or organizational frameworks by 1990.

Finally, looking to the future, the IAEA, with the assistance of experts from around the world, has developed a procedure for continuing further developments in the Regulations which should meet the needs of regulators, consignors and carriers alike and will thereby provide for the "protection of health and minimization of damage to life and property", as mandated by the IAEA's Statute.

REFERENCE

[1] POPE, R.B., McCLURE, J.D., Paper IAEA-SM-286/6, these Proceedings, Vol. 1.

REGULATIONS, CODES AND STANDARDS